STRATEGIC ASSESSMENT OF THE IS OUTSOURCING REVOLUTION

INPUT

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Abstract

The information systems (IS) outsourcing revolution is spreading. The U.S. market is already over $12 billion and may exceed $40 billion in five years: Some of the world's largest companies are participating. This report examines the rationale for IS outsourcing from both buyer and vendor viewpoints; the different types of IS outsourcing (it does not just apply to computer centers!); and the new opportunities in transition management, desktop services, and business operations outsourcing.

The report analyzes a specific IS outsourcing contracting process in which INPUT participated. It gives a checklist of components of an outsourcing contract and presents case studies of the various types of contracts.

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I

Introduction

Outsourcing is a term being used with ever greater frequency. It describes a process by which organizations contract part of their operations to other companies on a long-term basis. It can be applied to information systems (IS) processes in several ways. In the 1990s there is a trend by organizations to outsource their data centers, applications development, maintenance activities, and more; and for information technology (IT) vendors to change from being product or resource suppliers to being full-service solutions companies that provide IS outsourcing services.

To the IS executive who is burdened with strategic systems objectives, systems integration projects, and more technological alternatives than can be utilized, the call to outsource is often one more challenge, disruption, and proverbial "pain in the neck." Operating management is asking enough questions. The IS department doesn't need the vendors selling yet another solution over their heads and certainly believes it doesn't need to give up further *control*. Yet as story after story indicates, organizations are doing just that and are claiming significant benefits.

This report looks at IS outsourcing with a balanced view. Just what is really happening? What makes the vendors believe they can do it better? And how can an IS strategy and processes benefit from outsourcing?

In particular, how can outsourcing be used in a period of such revolutionary change in the nature and use of IT? The goal of this report is to clarify why IS outsourcing is an alternative to consider.

A
Definitions

IS outsourcing is the contracting of an information system function or process to a vendor on a long-term (at least one year) basis (see Exhibit I-1).

EXHIBIT I-1

IS Outsourcing Definition

Information systems (IS) outsourcing is the contracting of an IS process or function to an external vendor on a long-term (1+ years) basis.

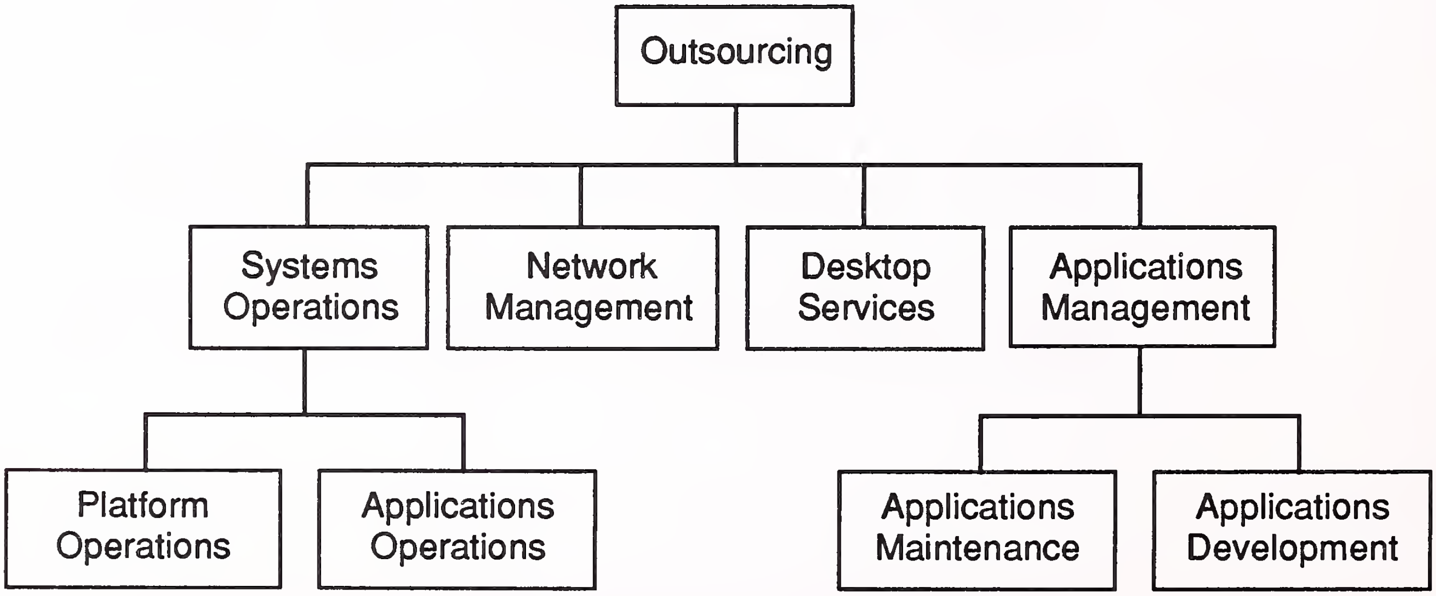
The various IS outsourcing segments are, as shown in Exhibit I-2,

1. Systems Operations - Contracting to a vendor the information systems operations in either of two ways:

- *Platform Systems Operations* - The vendor is responsible for managing the computer systems and their associated networks.

EXHIBIT I-2

IS Outsourcing Components



- *Applications Systems Operations* - The vendor is responsible for developing and/or maintaining a client's applications software as well as operating and managing the computer systems and their associated networks.

2. **Network Management** - Contracting to a vendor for the operations and management of the computer-related telecommunications network, transmitting data and text, voice, image, and video as required. Voice-only network operations are not part of information systems outsourcing.

3. **Desktop Services** - Contracting to a vendor for the deployment, maintenance, support, and connectivity of the organization's PC/workstation inventory. The service may also include performing the "help desk" function.

4. **Applications Management** - The vendor is responsible for the development and maintenance of all the applications systems a client uses to support a business operation.

- *Applications Development* - Contracting for the design, development, maintenance and enhancement of new applications software associated with a business operation.

- *Applications Maintenance* - Contracting only for the maintenance of the existing applications software associated with a business operation.

Information systems outsourcing is distinguished from systems integration in the following way: Systems integration is project oriented, i.e., there is a definable start and end point to the relationship other than the contract period. Systems operations and other forms of outsourcing are process oriented, i.e., there is a continuing relationship. (See Exhibit I-3.)

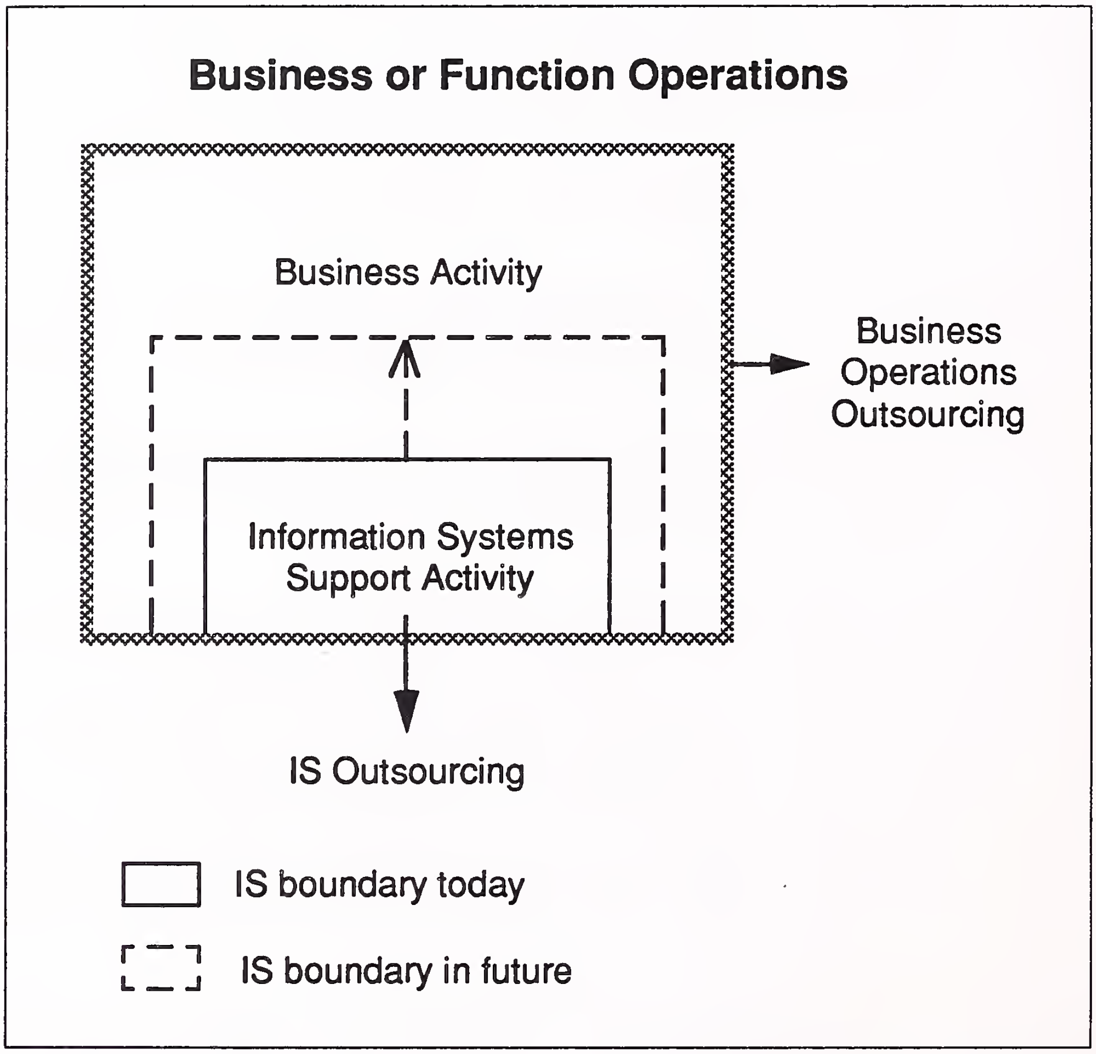
EXHIBIT I-3

Systems Outsourcing vs. Systems Integration

- Systems outsourcing is *function* or process oriented
- Systems integration is *project* oriented

Another area of outsourcing that relates to IS outsourcing is that of business or function operations. As depicted in Exhibit I-4, a business activity that encompasses an IS activity can be outsourced. In some cases, the proportion of the business activity that is due to IS can be high as, for example, in credit card operations or airline reservations. In other cases it may be low, as in textile manufacturing.

EXHIBIT I-4



When a business function is outsourced it includes the people and other organizational elements as well as IS.

In the 1990s the boundary between "IS" and non-IS inside a business function will be increasingly blurred. This will make the distinction between IS outsourcing and business function outsourcing more difficult to make, and perhaps less relevant.

B
Objectives

This report has the following major objectives:

- Position outsourcing as an approach to IS activities in the 1990s
- Identify the reasons for the rapid changes in IS outsourcing
- Characterize the forces behind the tendency for organizations to outsource IS functions
- Provide a framework for management to make and implement outsourcing decisions
- Identify the pitfalls and opportunities offered by outsourcing
- Characterize strategies of outsourcing vendors

This report is written for the executive who is ready to consider IS outsourcing and for the vendor who desires to participate successfully in this fast-changing market.

C
Scope

The report provides executives with an appreciation of the value of IS outsourcing, help in assessing the opportunity, and initial guidelines for implementation. The report is not a cookbook, but rather a conceptual framework to help management consider outsourcing as a tool for success in the 1990s.

Geographically, the report concentrates on the U.S. Most of the discussion is relevant to Canada, Australia, and similar areas. Many of the principles apply to European countries, where there is more rapid growth in some segments of outsourcing than in the U.S. but where the overall acceptance of outsourcing is much lower. These principles also apply to Japan and other Asian areas such as Hong Kong and Taiwan.

IS outsourcing as defined above is the principal focus of the report. However, it also deals with the increasing importance of business or function outsourcing.

The time-scale covered is 1992 to 2000 with the emphasis on the 1992-1995 period.

All industry sectors are covered by the report as well as all organization sizes where significant IS activities are present. The emphasis is on large organizations.

D
Methodology

This report provides a qualitative rather than a quantitative analysis. The research for this report comes, in part, from work performed by INPUT over several years in a number of areas.

- INPUT has tracked the underlying elements of outsourcing since the company's inception in 1974. It has identified each of the major shifts in the information systems and services industry as they pertain to the services offered and purchased.
  - For this report, INPUT has looked back over the 1970s and 1980s to capture the evolution and the source of change for what is now occurring.
  - The ups and downs of processing services and professional services, as well as the other delivery modes of the industry, all have bearing on the direction outsourcing will take in the 1990s.
- INPUT has, since 1984, tracked the shift from IS buying pieces of a project or requirement from a group of vendors to the sourcing of the entire need from a single vendor through systems integration (SI). The emergence of systems integration marked a major change in IS alternatives and in the capabilities of many vendors.
  - In 1989, INPUT changed the name of "facilities management" to systems operations (SO), a recognition that the services offered and the vendor/client relationship had changed significantly.
  - At this time INPUT had already projected that SI would lead to SO. It continues to explore how the systems integration process is adding fuel to the outsourcing trend.
- INPUT always has focused on the changing role of the IS executive and function. Prior reports have contributed to the framework and message of this report.

This report is an extension and update of a similar report published in 1990.

E

Report Structure

The following is a brief description of the organization of this report.

- Chapter II is an Executive Overview providing a summary of the research findings, analysis, conclusions, and recommendations of the report.

- Chapter III, *Outsourcing—Past and Present*, positions this current phenomenon and provides a definitional framework to use in considering outsourcing.

- Chapter IV, *Outsourcing—Buyers' Perspectives*, positions outsourcing against the forces driving information systems functions and the organizations they serve in the 1990s, and discusses how outsourcing can be used to achieve an organization's IS goals.

- Chapter V, *New and Developing Outsourcing Opportunities,* discusses business operations outsourcing as an extension of IS outsourcing and provides analyses of the fast-growing areas of transition management and desktop services.

- Chapter VI, *Outsourcing and Vendor Capabilities*, analyzes the types of vendors that are providing IS outsourcing services and provides a framework to evaluate them.

- Chapter VII, *Outsourcing—Decision and Implementation*, provides a framework to help information systems executives push forward with consideration and use of outsourcing to meet their objectives and responsibilities.

- Chapter VIII, *Example of Outsourcing Contracting Process*, describes a recent outsourcing vendor selection process, showing the rationale, timescale, and specific steps followed.

- Chapter IX, *Case Studies in Outsourcing*, provides brief case studies that illustrate the various types of outsourcing occurring today.

F

Related Reports and Research Bulletins

The impact of outsourcing is apparent throughout INPUT's recent and planned research and analysis activities, and is reflected in a variety of the reports and bulletins published in the past two years.

1. U.S. Reports

- *Interaction of Downsizing with Outsourcing*
- *Methods of Approaching IS Outsourcing*
- *Outsourcing Network Management and Operations*
- *Outsourcing Desktop Services*
- *Outsourcing Applications Management*
- *IS Outsourcing Market Opportunities, 1992-1997*
- *Information Systems Outsourcing Competitive Analysis*
- *Outsourcing Awards Analysis*
- *Outsourcing Buyers' Issues and Alternatives*
- *Systems Management Priorities and Directions*

2. European Reports

- *Outsourcing Systems Operations*
- *Outsourcing Network Management and Operations*
- *Outsourcing Desktop Services*
- *Outsourcing Applications Management*
- *Information Systems Outsourcing Market Opportunities, 1992-1997*
- *Information Systems Outsourcing Competitive Analysis*
- *Marketing Issues in Systems Operations*
- *Systems Operations Buyer Issues and Alternatives*
- *Systems Management Priorities and Direction*

3. U.S. Research Bulletins

- *Network Operations Outsourcing*
- *Data Center Outsourcing—Successful Operations Are Also Candidates*
- *Application Systems Operations—The Other Part of the Business*
- *Application Systems Operations—A Growing Trend*
- *Buyer Issues and Alternatives*
- *Managing the Outsourcing Relationship*
- *Systems Operations/Outsourcing Forecast*
- *Largest Commercial Outsourcing Pact Signed*
- *Risk Assessment Strategies for Outsourcing Vendors*
- *The Systems Operations/Outsourcing Market in Japan*
- *Canadian Systems Operations/Outsourcing Market*
- *Two-tiered Outsourcing: Who's on First?*
- *EDS Strengthens its Manufacturing Position . . . Again*
- *Network Outsourcing . . . Global Picture Is Confused*
- *The IBM Reorganization: Viewed Through a Knothole*
- *Desktop Services: Get on the Downsizing Express*
- *Outsourcing—Changing Trends*
- *Outsourcing and the Federal Market*
- *GE/EDS Agreement Sets New Milestone in Desktop Services*
- *Network Management—Perceptions and Expectations*

- *EDS and Freeport McMoran Go Their Separate Ways*
- *Outsourcing Market Changing and Expanding*

4. European Research Bulletins

- *Client Vendor Relationship*
- *Transition Management*
- *User Skill Deficiencies Remain Most Important Driving Force for Systems Integration*
- *Groupe Bull Systems Integration Strategy*
- *Competition for Key Partners Leads to Long-Term Alliances and "Locking Out" of Competitors*
- *User Perspectives on Outsourcing Network Management*
- *Practical Network Management*
- *Network Management Services—A Market Leadership Opportunity*
- *Access to Key Decision Makers*
- *Account Managers Are the Key Personnel for Developing Systems Integration Contracts*
- *Sharing Project Models Steers Users to Low-Risk Options*
- *Industry-Specific Business Experience—A Critical Success Factor in Systems Integration*
- *Management Consultancies Typically Act as "Consulting Engineers" not "Prime Contractors"*
- *Unisys' Complex Systems Organisation*
- *ICL Secure Systems*
- *IS Cost Reduction Presents Opportunity for Systems Operations Vendors*
- *Desktop Services—A Key Outsourcing Opportunity*
- *Acquisition of Dataid Confirms AT&T Istel's Commitment to Outsourcing Leadership Position in Europe*
- *New Data Sciences Outsourcing Contracts Emphasize Desktop Support Capability*
- *Hoskyns Re-organises to Address New Outsourcing Opportunities*
- *Outsourcing—A Focused Growth Area for Digital*
- *TDS is Adapting its Outsourcing Services to the Client/Server Environment*
- *Axone's Revenues Grew by 70% in 1991*
- *Télésystèmes Will Diversify Beyond Platform Operations*
- *GSI is Targeting Application Operations for Future Growth*

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II

Executive Overview

A
Conclusions

The key conclusions from this analysis of information systems (IS) outsourcing are shown in Exhibit II-1:

EXHIBIT II-1

IS Outsourcing Directions

- Outsourcing is a revolution in IS.
- Outsourcing in the 1990s is different.
- Outsourcing offers great opportunities.
- Outsourcing can improve IS response time.
- Outsourcing can help IS change its role for the better.
- Outsourcing is being impacted by the other revolutions.
- IS outsourcing can lead to business operations outsourcing.
- Transition outsourcing is growing rapidly.
- Vendor strategies are shifting in favor of outsourcing.
- Vendor performance is proving to be more than satisfactory.
- The volume of outsourcing activity can only increase.

- There is a revolution in IS outsourcing. For the first time ever the very largest companies (Sears, United Technologies, Kodak) are outsourcing major parts of their IS functions. The extent of the revolution is unpredictable; it changes relationships as shown in Exhibit II-2.

EXHIBIT II-2

IS Outsourcing Is Revolutionary

- Change in client thinking about IS
  - New way to do business
  - Vendors deal with users
  - IS unit 'gatekeeper' function disappears
- Changes buying and distribution patterns
- Vendor/client partnerships result
  - Functional responsibility to vendor
  - Increased dependence for clients
  - Increased responsibility and risk for vendor
- Vendor success tied to client success

- There are significant differences in the outsourcing being done today from just a few years ago. Most significant are the following:
  - Breadth of services contracted
  - Inclination to buy from a single vendor
  - Magnitude of the professional services content of most outsourcing relationships
  - Amount of management responsibility assumed by the outsourcing vendor

- Purpose of outsourcing contracts (see Exhibit II-3)

- Length of outsourcing contracts

EXHIBIT II-3

Changes in Outsourcing Purpose

- IS cost reductions still important
- Business reasons more important
- Capital considerations more important
- Skills access more important
- Transition agent much more important

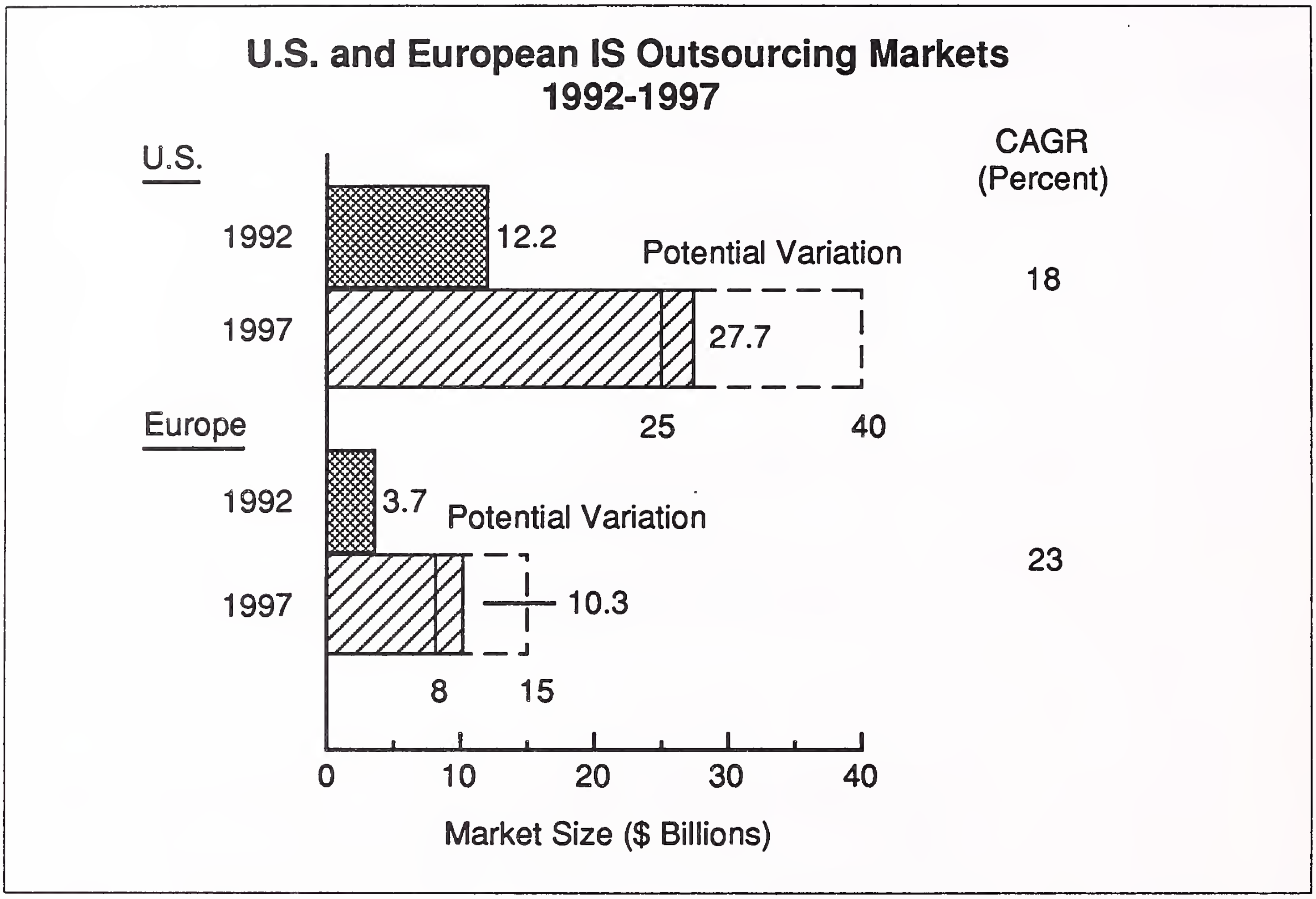
- Outsourcing is more than systems operations—including new and expansive combinations of products and services to provide applications management, transition management, and other services. Desktop services is the fastest growing outsourcing market. Overall, the market will more than double over the next five years and could triple as shown in Exhibit II-4.

- The biggest challenge facing any organization today is response time. An IS organization that continues to do all or most activities by itself cannot meet the response expectations of management. Outsourcing is a tool to meet that expectation.

- In this regard there is the potential in existing contracts alone to perhaps double the size of the IS outsourcing market. Even if no new contracts were signed, the total IS outsourcing market could grow 10% per year from existing contracts. If expanded to business operations the potential is 5 to 10 times the existing market. EDS could be a $25 billion company without adding a new client!

- The benefits to the information systems function from outsourcing can be many, but most significant is that IS can gain the freedom and ability to play a stronger leadership role.

EXHIBIT II-4



- The other revolutions in the IS world are impacting outsourcing. Downsizing in particular is creating very large opportunities but is also a distinct threat to established services and vendors. Networking and re-engineering revolutions are also dramatically impacting the outsourcing wave.

- In the past, outsourcing was confined to the continuation of the existing IS architecture and processes. Now it is being regarded as an agent-of-change by which the client can move from the old IS environment to the new one.

- The progressive information systems and services vendors are shifting their strategies to provide broad, flexible products and services to meet outsourcing requirements. These vendors market a combination of professional services, systems operations, applications development, and support—and within vertical industries, focus on applications software and processes as well.

- INPUT's research in the systems operations and systems integration areas is recording better-than-satisfactory vendor performance. Vendors are proving they can provide the products and services on large agreements, provide systems management, and build solid partnership relationships with their clients.

- There is currently very little "fallout" from outsourcing contracts, although some is to be expected because of ill-conceived or ill-structured contracts. Thus the base is sound. Since outsourcing, by definition, is a change of IS spending approach rather than creation of new spending, the total market can only grow rapidly. A large organization can change $100 million or $1 billion a year from internal "IS budget" to external "IS outsourcing" status with a few strokes of a pen!

- As IS and business functions become more integrated there will be many opportunities for IS users and vendors to expand their outsourcing relationships to non-IS activities. In this area there will be conflicts with non-IS competitors. This issue must be a significant consideration for organizations considering outsourcing.

B

Recommendations for IS Users

INPUT's recommendation to IS users is simple—consider outsourcing as an alternative for each and every information systems process. Outsourcing can unlock the potential of information systems from restrictions such as limited staff, application development backlog, ignorance of new technology, and lack of management skills.

- Use outsourcing to improve the overall effectiveness of data centers and networks. The result may be reduced costs, capital requirement, and management time and increased user satisfaction.

- Use outsourcing as a solution to the maintenance-versus-new-development dilemma. The result may be a more disciplined maintenance process, which can re-engineer existing systems and save money.

- Use outsourcing as a means to broaden the use of IS in operating units—they pay the bills and should have access to all alternatives.

- Use outsourcing as a means to reorient IS management to higher-level priorities. For example, the data center manager can become the architecture manager.

- Use outsourcing as a means to get the most out of a smaller, more proactive IS organization, or to get rid of many of your IS functions and problems.

- Use outsourcing as a transition vehicle to change the use of IT from a centralized, separate function to a user-owned process.

EXHIBIT II-5

Recommendation for IS Users

Make outsourcing part of the information systems program

Outsourcing, in the eyes of the progressive IS manager, is an opportunity to speed the change in his/her role from IS operations manager to IT tactician and strategist. Prudent use of outsourcing services can increase the opportunity of success in the short term and facilitate plans for the long term.

Outsourcing does lead to a decline in the role of IS executives as a managers of resources. Their real role addresses the future, not the current, use of information technology. No IS executive need fear for his/her role unless the executive is comfortable only with the day-to-day activities of the IS function.

C

Recommendations for IS Vendors

The impacts on vendors are considerable. Outsourcing changes the relationship between the vendors and the ultimate users. In the past, information systems organizations have acted as the gateways between ultimate users and providers of technology. Outsourcing provides a more direct link between the vendors and the ultimate users, in many cases bypassing information systems organizations.

The proof in the end will be in the vendor's ability to manage what it sells. At no time in the history of the information services industry has the vendor assumed such a significant management role in its relationship with its clients.

Vendors are signing up for full responsibility for the data center and data network, delivery of strategic solutions, and providing 24-hour application maintenance service. Vendors are saying and proving that they can manage information technology better, or at least as well as, the internal

information systems function...and that by assuming a significant management role, they can help IS achieve its goals more effectively. Over the long haul, the proof will be in how the vendors perform this management role.

EXHIBIT II-6

Recommendation for IS Vendors

Get on the
'band wagon'
before its too late!

In virtually every phase of IS activity there are opportunities for outsourcing. Outsourcing is a revolution!

- Outsourcing changes the buying and selling points for IT products and services. It opens up some major market opportunities but drastically constrains other.

- If a vendor chooses not to pursue those outsourcing activities open to it, the credibility of its product/service becomes suspect. Many prospects will choose not to outsource but to use the product/service as a tool or component in their solution—but the fact the vendor is willing to step up to the operational challenge if necessary demonstrates faith in its effectiveness.

In many cases it will be necessary to have a partner to provide this demonstration. For example, an applications software products company may partner with a processing services company to demonstrate applications operations capability.

"Outsourcing makes
good business sense for the client"

Fortune article, Sept. 23, 1991

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III

Outsourcing—Past and Present

This chapter provides a framework for users and vendors to position IS outsourcing. It provides a short historical perspective, identifies what is different in the 1990s, and defines outsourcing in terms that can be used to consider this ever more viable alternative.

A
Historic Perspective

Outsourcing is one of the key *theme* words of the 1990s, widely used throughout the computer industry to reflect renewed interest in "buying" computer and communications services.

To no one's surprise, the concept is not new. In fact, the value of IS has always been based on acquiring and applying products and services from a unique set of vendors. At first, only hardware and systems software were acquired; now a complete set of products and supporting services, including management, can be acquired.

Outsourcing is a term that stirs up considerable skepticism on the part of both users and vendors. Many people believe that "handing over" wide-ranging management responsibility for the provision of information technology services is an admission of failure. Others believe it is the most cost-effective and trouble-free way to receive necessary IT support.

Does outsourcing have the potential to really become a mainstream information service over the next decade? An historical perspective of the computer industry over the last four decades (in effect, most of the life span to date of the modern computer industry) indicates that it does have that potential and that conservative practice and skeptical user attitudes will erode just as they have in many other sectors of the industry.

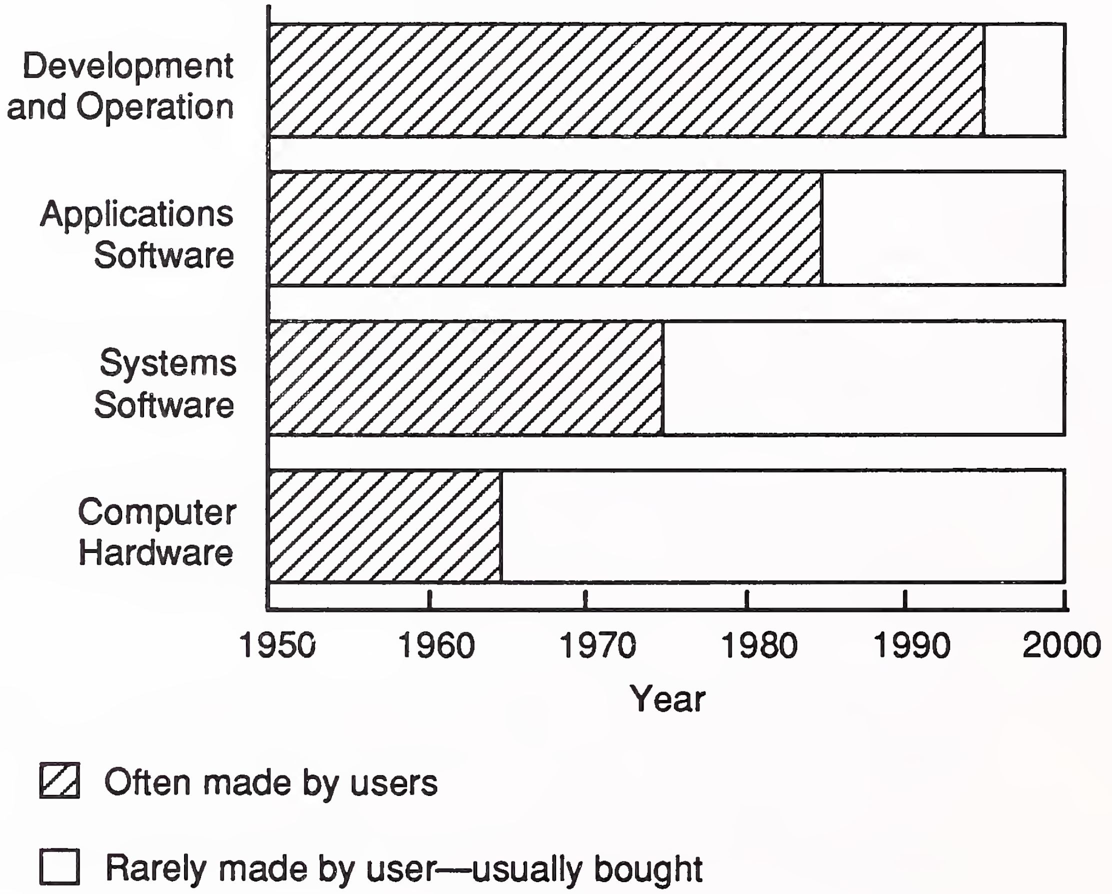
Throughout the development of the computer industry, users have been challenged by the "make versus buy" question. Just as in any other field of economic activity, three significant factors affect the answer to this question:

- The availability and complexity of the technology
- The definition of the application
- The economics

As Exhibit III-1 illustrates, the threshold of "buy" rather than "make" has moved steadily higher in the hierarchy of information technology products and services as the industry has developed over the last four decades.

EXHIBIT III-1

Historic Perspective on IS "Make or Buy"



The 1950s—The Era of Custom Hardware Systems

During the 1950s and early 1960s, many major companies entered the market as suppliers of computer systems to form the computer manufacturing industry. Several of them were "users" rather than traditional business equipment suppliers.

Today, users generally don't contemplate developing and producing their own customized equipment, except perhaps in some very specialized environments. The 1950s were characterized by the general use of customized hardware systems and, of course, custom specific software.

The 1960s—The Era of Custom System Software

During the 1960s and even well into the 1970s, computer users were developing their own systems software, although basic operating systems had become reasonably standardized. The "make versus buy" threshold had advanced. Products such as TSO (timesharing option) and IMS (information management system) came from user-initiated developments, which were then absorbed by the computer manufacturer—in these cases IBM.

The 1970s—The Era of Custom Applications Software

The 1970s brought the beginnings of the standard application package concept to the market and more standardization (albeit on a proprietary basis) to wider levels of systems software, e.g., data base management systems (such as IMS) and communications monitors (e.g., CICS, TSO). Here users started to buy applications software and services.

The 1980s—The Era of Custom Systems Operations

The 1980s saw wide acceptance of the applications package concept to the extent that, by the end of the decade, categories of software (notably for personal computers) would rarely be considered for in-house production. Also during this period, a serious acceptance of systems operations (outsourcing of computer/network operations) as a viable way of obtaining information services, began to emerge.

The rapid decline of some processing services from the end of the 1970s can be seen in historical perspective as an early victim of technological downsizing. The arrival of low-cost versions of mini-computers and then PCs hit the processing services business (particularly remote computing services or timesharing) very hard at the beginning of the 1980s. This decline reflected the dynamic balance between the forces of technology, applications, and economics.

Generally, however, organizations continued in the 1980s to operate their computer/communications (or information systems) environments on a customized basis. They bought standard equipment, systems software, applications software, and communications and assembled these components into an infrastructure that was unique to each organization.

The 1990s—The Era of Standard Operations

The 1990s present the very real possibility that IS outsourcing can overcome user resistance and doubt and become accepted as a normal approach to delivering information systems.

An evaluation of the three factors identified above—the availability and complexity of the technology, the definition of the application, and the economics involved—indicates a trend to outsourcing IS services:

> As *technology*, through the agents of downsizing and networking, reduces the hardware cost element as a proportion of total user expenditure, the increasing proportions spent on software development, systems maintenance, and other services is emphasized. The *economics* of the "make versus buy" argument are increasingly only concerned with these latter elements.

> There is also evidence of a slowdown in new *applications* requirements caused by such factors as the inability to profit from increased data and information flows, and the consequent decreasing marginal benefits of new application areas. Thus, if there is not much that is new or of competitive differentiation in the use of IT, then companies might as well share, from an economic viewpoint! This dynamic again strongly affects the economics of information systems and services influencing cost saving and convenience.

Exhibit III-2 traces the evolution of two IT services. Each has expanded from a commodity type of service through increased levels of added value and responsibility. In each case, the result has been multiple levels of service availability to the customer: in other words, you can still buy "computer time" and "people time."

EXHIBIT III-2

Evolution of IT Services

	1960s	1970s	1980s	1990s
Professional Services	People Time	Applications Projects	Systems Integration	Applications/Syst. Management
Processing Services	Computer Time Applications Proc.	Facilities Management	Systems Operations	Business Operations

- The professional services vendor started by selling planning and requirements specifications or by being a programming contractor—somewhat of a "jack of all trades." The next step was to merge these two services and develop the entire application on a project basis. Then professional services firms became systems integrators, whereby they took responsibility for the selection and implementation of the systems platforms as well as the applications development and installation. Now they are offering to be responsible for the whole applications development, maintenance, and enhancement process for a customer, including all the new and existing applications.

- Processing services began by providing either access to basic computer hardware and software or very specific individual services, e.g., payroll. These expanded in numerous directions, including network services and contracting for the operation of data centers—facilities management (FM). FM became too limiting a term as the vendor increasingly became responsible for not just the "facility" but also the network, remote locations, user interfaces, etc. Thus, FM became systems operations.

  - The focus, formerly only on computer operations, now includes planning, control, operations, and often networks and some elements of development.

  - To a growing degree, the focus is on the dismantling of data centers with the client turning to vendors to provide services from the vendor's data centers—a processing utility.

  - Systems operations is in turn being expanded to include non-IS activities (clerical, operational, professional and management), thus moving into business or functional operations.

None of these changes occurred overnight, but they have occurred at a reasonably fast pace over the last two decades. Where organizations hesitated to go outside and usually only did so on a subcontractor basis for "bits and pieces," now they are looking at the entire requirement and buying more comprehensive services from a single vendor.

B

Drivers to Outsourcing

As has been consistently demonstrated by research, the most important driver to outsourcing is economic or financial, as shown in Exhibit III-3. Buyers want to

1. Reduce operating costs, or at least avoid growth in operating costs

2. Reduce the need for capital whether directly or indirectly

EXHIBIT III- 3

Drivers to IS Outsourcing

- Economics
- Risk reduction
- Simplification/single source
- Focus on core-competency
- Transitions in IT architecture
- Organized restructuring

According to a *Fortune* magazine article published on September 23, 1991, clients can save up to 40% by outsourcing. INPUT's experience in analyzing outsourcing contracts is that savings are usually much less. In fact, there is often very little change in direct operating costs when an IS outsourcing contract is implemented.

There is certainly a reduction in capital requirements or lease liabilities from outsourcing. Historically this was most important in dealing with large computer mainframes and their software. Recently, however, avoidance of the capital or lease requirements for desktop systems has become a driver to desktop services.

Risk reduction is another factor in choosing outsourcing. Making significant changes in operations, for example consolidating and changing operating environments, is fraught with risk. These can be ameliorated by outsourcing to a vendor with the experience and capability to achieve the objective.

In a time of increased complexity in all levels of business and technology, organizations wish to simplify their decision-making process. To the extent possible they wish to go to a single source for a specific service. This is the essence of partnership. Outsourcing shifts many of the more detailed decision processes from the customer to the vendor. The customer uses the vendor to evaluate the myriad technical and architectural choices.

An article in the *Harvard Business Review* ("Beyond Products: Service-Based Strategy"—*HBR* March/April 1990) put the theoretical basis for IS outsourcing very well. It stated that organizations should focus on their core competencies and outsource other activities. Outsourcing builds flexibility. For most organizations IS in not a core competency although it is an essential component of almost all business functions.

Increasingly, outsourcing is an agent of change. It is particularly effective as organizations try to re-engineer their IS architectures. Transitions from centralized, mainframe-oriented architectures to downsized, client/server, networked structures are almost impossible to achieve without external assistance. Outsourcing of the traditional IS operations can help in this process.

Outsourcing is also driven by changes in the organizational structure of the buyer. Acquisition and divestiture of units or whole businesses often require dramatic change in IS beyond the scope of internal organizations. In some cases, environmental change leads to fundamental organization change that in turn leads to outsourcing. The reduction in Department of Defense expenditures is dramatically hurting aerospace contractors resulting in requirements for radical organization change. Consequently, companies such as General Dynamics and United Technologies are led to outsource IS activities.

Business re-engineering to achieve economies and improved customer service also drives organization towards outsourcing.

However, there are reverse sides to many of these drivers which act as inhibitors to the move to outsourcing, as listed in Exhibit III-4.

EXHIBIT III-4

Inhibitors to IS Outsourcing

- Economics
- Poor bidding
- Fear of loss of control
- Integration of IS and business operations
- IS as a competitive differentiator
- Consultants

Many organizations question the real savings to be gained by outsourcing. The analysis is often biased by not fully costing internal IS operations. However, by now, corporate executives are wise to this bias and take steps to ensure that it is not as exaggerated as it has been.

Vendors do not help their cause by underestimating the potential for price decreases over the life of a contract due to technology improvement. In a recent series of proposals reviewed by INPUT one large and significant outsourcing vendor had the temerity to suggest that storage costs would increase with inflation over a seven-year contract period. Another suggested that the cost per gigabyte would only decrease by 32% in total over the seven-year period. In fact, there are storage cost reductions averaging over 20% per year.

These circumstances lead many potential buyers to fear being "locked-in" to expensive, obsolete technologies by outsourcing vendors. They fear losing control of their destiny and not being able to take advantage of IS changes.

After all, almost everyone is now aware of the financial characteristics of outsourcing contracts where typically a vendor loses money in the first year of a contract (due to start-up and conversion costs), breaks even in the second year, and starts to make money in the third. If the environment changes, the vendor has not got a vested interest in changing with it, at least according to companies that have rejected outsourcing.

There are also questions related to changing of the role of IS. If IS is going to become more integrated with the business functions and lose its separability, how can IS functions be outsourced? This, of course, is a key argument for IS outsourcing vendors to move into functional or business outsourcing.

There are still many companies hanging onto the myth that having in-house IS will provide competitive advantage. It certainly can do so for a very limited set of companies. But any such advantage can only come for a relatively brief period and at great cost. It only comes from a limited applications set. Nevertheless, many companies want to perceive of themselves as being at the leading edge in the application of technology to their business; they feel that outsourcing will put them into the same condition as everyone else.

Consultants play on this fear. In general, consultants do not want to encourage an outsourcer onto an IS organization. They perceive they will probably lose a customer if they do so. Several consultants have built a lucrative business by comparing in-house IS operations with outsourcing vendors and then selling major projects to attempt to bring these in-house operations to the same standards as those of the vendors.

C
What Is Different in Outsourcing Today?

There are a number of significant elements within the information systems arena, involving users as well as vendors, that are quite different from just five years ago.

1. Information Systems Users

Listed in Exhibit III-5 are the key issues in IS from the users' perspective. They add up to a greater complexity of information technology and to the measurement of the value of information technology being tied more directly to the success of the business.

EXHIBIT III-5

Information Systems Issues of the 1990s

- Variety of information technology alternatives
- Size of existing information technology investment
- Size and complexity of solutions
- Organizational skills required
- Requirement for flexibility and rapid response
- Business measurement of information systems
- Shift in the location of the IT payback

- The simple fact is that there are too many ways to use information technology within an organization. Developers have always created information technology faster than users could apply it. However, since the last half of the 1980s, the rate of development has exploded, outstripping an already burdened IS function. There is no way that most IS organizations can know about—let alone understand and select from—all that is available for use.

- A key restriction on the IS function is the size of the existing information technology investment. After two to three decades of development, most IS functions carry along an incredible amount of valuable, but at times restrictive, baggage. The maintenance drag of these "legacy" systems is well documented. Whether it is trying to re-engineer the older applications, interface them to newer technology, or just support them, the resources required for maintenance restrict what is available for new applications and technology.

  - Older information technology investments may need to be written off just like old machinery. Unfortunately, these investments aren't "on the books" or valued like old machinery. IS departments have trouble gaining agreement to write them off.

  - One benefit from a more active involvement in information systems by senior operating management is that they can decide to write off older IS investments.

- For a number of reasons, the systems that have been developed in the last few years are larger and more complex than before. They address larger segments of an organization's operations, affect more people, and cause more change. Yet the time between identification of need and implementation has shortened. The internal IS function often finds it does not have the necessary knowledge and skills to create today's complex solutions.

  - However, there is now a strong counter current to this trend. Organizations are reverting to smaller, simpler systems and are changing development methods.

  - This change is fostered by the shift of responsibility for systems from the IS department to the user departments. This shift has numerous consequences; among them

    - Users do not try to address all the possible ramifications of a system. They want an 80% system now—and as we all know, it is the remaining 20% of the system that takes 80% to 95% of the development time and effort.

    - Users look at their own needs primarily and do not try to solve other organizational units' problems. They optimize their systems.

  - The development methods used in downsizing environments are parallel process oriented, as opposed to serial process oriented. Thus, there are no separate phases of requirements, design, coding, testing, and implementation.

- Almost every organization is trying to do more today with less staff. There is very little ability to respond to unexpected staff requirements or to evaluate the expanded set of information technology capabilities.
  - The available pool of information systems professionals has not kept up with the technology. As a result, the majority of the "inventories" of systems professionals are of declining value.
  - IS vendors have been able to attract a larger proportion of valuable IS professionals by providing more expansive career opportunities, further impacting the recruiting efforts of traditional IS departments.
- The pace of business change is significantly faster than it was a few years ago. However, strapped with an existing, often obsolete, information technology structure and an explosion in IT capabilities, the typical IS function struggles just to keep up with daily requirements, let alone respond quickly to the unplanned.
- A major result of the increased involvement of the user in information technology is a change in the way the IS function is measured and evaluated. Today the measurements are commonly tied to the success of the business, which is permitting and driving different types of IS decisions.
- A recent result of the information technology explosion is a shift in emphasis within the information network. Although the mainframe will not go away, the payback is now tied to workstations, LANs, and networks. The data center is becoming a utility in the true sense of the word. Once its value is viewed in this fashion, alternatives become easier to consider.

The 1990s find IS a more integrated and better understood function, facing the same business challenges as the rest of the organization. It also faces a fundamental question of its future existence as a separate organizational unit, as depicted in Exhibit III-6.

EXHIBIT III-6

Fundamental IS Organization Issues

- Will the IS organization become extinct?
- If not, what will it do?
- If it does, how will its functions be handled?

An IS organization is often reduced to being a "bare bones" organization when the outsourcing vendor assumes responsibility for the processing, the application, and the staff. Yet, the IS strategy must still be controlled by the user organization. Most CIOs who have undergone this radical change have found themselves with more time for technology evaluation and IS strategy development—the fundamental reason for their job to begin with. The functions of IS strategy development and technology impact assessment must stay with the user organization if the client does not want to be overly dependent on the vendor. This issue will be explored at length in Chapter IV.

2. Information Systems Vendors

Listed in Exhibit III-7 are the key information systems vendor capabilities. They add up to a stronger and more proven resource with an emphasis on services first and products second.

EXHIBIT III-7

Information Services Vendor Capabilities in the 1990s

- Variety and power of information technologies
- Size and skills of information services vendors
- Maturity of information services vendors
- Experience and knowledge
- Ability to take risk
- Recognition of business role of information systems
- Ability to market directly to operating management

- The very rapid changes in information technologies are a burden for the IS user and the vendor, but also represent an opportunity for the IS vendor. The ability to select segments of information technology in which to specialize, apply new technology faster than the user community, and attract skilled personnel enables vendors to grow by offering solutions in a timely manner. However, vendors have an increasing R&D requirement to understand and evaluate technologies and their implementation.

- Where a large information services vendor in the 1970s was a $100 million company, today many vendors that did not exist ten years ago are approaching $1 billion. The largest professional services firms are capable of investing in and developing their own products. The larger software product firms are building professional services organizations and the already large equipment firms are shifting to software and services. Processing and network services companies offer solutions on a global basis. Today, it is possible to find a strong, viable vendor to do almost anything with information technology and often do it better than most internal IS staffs.

- Along with skills and size has come maturity. Many vendors now have seasoned management that is willing and prefers to establish long-term client relationships.

- Vendors have built a pool of knowledge and experience on the use of IT within like organizations. This is rarely equaled by in-house staff whose experience is perforce limited to one or two organizations. As a result, vendors can quickly evaluate and apply new technology effectively.

- Their size, along with seasoned management, makes it viable for many vendors to assume significant risk. In the past, as a programming sub-contractor, the vendor sought short-term, time-and-material contracts, and the applications software products vendor sold, but did not install, its product. Today the vendor will accept a reduced return in the short term if the relationship has a long-term basis. Fixed-price contracts are the standard for systems operations agreements.

- The increased importance placed on the use of information technology by operating management has also benefited the vendor. Since operating management is more likely to describe the problem in a larger context, more complex ideas and solutions result. Many vendors are now more effective than the internal IS staff at describing how information technology can benefit the business.

- The result is the opportunity for the vendor to market directly to operating management. This permits more information technology alternatives to be considered and newer technology to be considered more quickly.

The 1990s are starting with stronger, larger vendors capable of attacking large, complex requirements and managing the total process.

Fundamentally the differences between buying information services and outsourcing are depicted in Exhibits III-8 and 9.

EXHIBIT III-8

Outsourcing vs. Buying Services

- 1980s: Services achieved recognition
- 1990s: Overcome prejudice against buying management services

EXHIBIT III-9

Outsourcing Relationship Characteristics

- Greater commitment on part of buyer
- "Partnership"
- Responsibility/risk for vendors

- On the one hand, information services as a viable alternative to in-house IS activities became credible at all sizes and types of organization in the 1980s. The information services industry grew to over $100 billion a year in 1991 in the U.S.

- But buyers were generally still prejudiced against "turning over" their IS functions completely to a vendor. This prejudice against buying the management of IS will disappear in the 1990s.

- Also, in the 1980s the supply side was not strong enough to meet the demands of the larger, more sophisticated IS user. With the increase in size of many independent vendors such as Andersen Consulting, CSC, and EDS and the entry of the large system suppliers like IBM and Digital, this credibility problem has largely disappeared.

The nature of the relationship changes in outsourcing versus just buying services.

- Firstly, there is a greater commitment by the buyer. These are long-term relationships not the contracting relationship that can be turned off relatively easily.

- Also the outsourcing relationship is not simply turning over responsibility to a vendor. It is a partnership in the IS management process. Both parties are involved in planning, organizing, communicating, and controlling the IS direction for their outsourcing partnership.

- This entails much more responsibility and risk for the vendor. The seller of a software package or a facilitating service can still blame the buyer for not using it properly, just as with a computer; in an outsourcing relationship that opportunity goes away. The vendor promises results and has to deliver by contract.

D
IS Outsourcing Characteristics

So far this chapter has characterized outsourcing as a trend, summarized the evolution of IS outsourcing services, and described the issues of information technology use from the vendor and user points of view. In this section, outsourcing is described in terms of the underlying characteristics of the outsourcing decision and the types of outsourcing opportunities that are or will become common.

INPUT views *outsourcing* as the opposite of *insourcing*. Anything that IS has considered feasible to insource (data center operations, applications development, applications maintenance, network management, training, etc.) and has traditionally done itself should now be viewed as a candidate for outsourcing.

The momentum behind outsourcing is reflected in the recent trends in systems integration and systems operations.

Systems integration reflects the recognition by the buyer that the thing to be purchased is the s*olution* rather than *components*. Just as a company would contract to have a new plant built, now it also contracts for all facets of the factory control systems for that plant. Instead of buying the hardware, software, and integration effort in pieces from a number of vendors, it turns to a single vendor.

IS traditionally has run its own data center for control and economic reasons. Today that rationale is no longer viable for many organizations; thus, the recent expansion of the systems operations market sector.

- The challenge of running a data center is demanding more financial, personnel and technical resources, which is changing the economic equation.

- Many large organizations are consolidating data centers into very large processing utilities to take advantage of data center automation and to meet the demands of network integration, yet they find the challenge outstrips the skills of their staffs.

- Meeting the demands for processing services is diverting IS management from the real priorities of solving operating problems and fulfilling information needs. By contracting the processing utility outside, attention can be focused on new applications and solutions.

These demand-driven characteristics are matched by supply-side characteristics. Many buyers are finding that vendors are now equipped to provide broad-based information systems implementation and management as or more effectively than internal units—that is, at a lower cost and with better performance over time.

In addition, major vendors use asset acquisition and capital assistance as powerful marketing tools to win large contracts. These vendors "acquire" systems operations contracts rather than just "sell" them. "Deals" often include the transfer of the buyer's staff, the purchase of data centers, assumption of leases and software licenses, and even stock purchases. Vendors to the banking community have made large deposits in client banks.

The characteristics of today's vendor/client relationships are, as noted in Exhibit III-10, quite different from those of a few years ago.

EXHIBIT III-10

Outsourcing Characteristics for the 1990s

- Size, nature, and length of commitment
- Breadth of responsibility assumed by vendor
- Partnership versus supplier/subcontractor
- Technology enhancements mandated
- Agent of change/transition outsourcing
- Professional services extensions
- Management extension

- The size of SO contracts has increased as larger organizations have turned to outsourcing. In the past facilities management contracts were typically awarded by medium-sized organizations, so a $100 million contract used to be a very large contract. Today outsourcing contracts are awarded by even the very largest companies, such as Kodak, General Dynamics, United Technologies, etc. In addition, organizations such as General Motors and IBM have their own "captive" outsourcer. So now $100 million contracts are much more common and $1 billion contracts are being considered and awarded.

- However, INPUT research in 1992 has identified a major change in the length of contracts. In the 1980s there was a trend to longer contracts reaching from 10 to 15 years in some cases. Now contracts are getting shorter. Prospects believe they can get more leverage with the vendor through shorter contracts. Many users also recognize that the rates of business and technology change are making the initial contract obsolete in a few years.

  As noted above, the nature of the contract is also changing. It is much more often like the purchase or acquisition of a company than the sale of a contract. The "company" in this case being an operation with staff, assets, and a revenue stream, albeit one that is usually only from a single customer.

- The breadth of responsibility assumed by the vendor is increasing. Historically, vendors focused on the data center in outsourcing contracts. In some industry sectors (banking and insurance), they also took responsibility for applications, but in most cases this was the operation of their own "packaged" service rather than the customers' unique software. And almost always these were transaction processing services. Today vendors have expanded their scope of service to include the data and voice telecommunications networks, the management of the "legacy" applications, new and packaged software, end-user systems, analytical and professional systems, etc. They also participate more intensively in the IS and business planning activities with the client.

- The relationship between client and vendor is better characterized by the term partnership than by buyer/supplier. The buyer is contracting for a set of services that are of strategic as well as operational value, and expects to have a relationship marked by a high level of communication, performance, flexibility, and integrity—a relationship similar to the type it has with its other business partners for the products and services it markets.

One consequence of this changed relationship is that the structure of the actual contract is evolving. In the 1980s, contracts were extremely detailed and rigid. Both sides attempted to cover all eventualities. This is proving virtually impossible. So, in the 1990s, there is more flexibility built into contracts and more room for contract or relationship evolution.

On the other hand, some aspects of the contracts being negotiated by today's more knowledgeable buyers are tighter. Contracts now include significant non-performance penalties and technology refreshment clauses.

- Though cost reduction continues to be the prime motivator identified by users for outsourcing, more attention is being given to the value of technology enhancement that follows as part of the outsourcing arrangement. There is growing recognition on the part of users that it is in the vendors' best financial and business interests to regularly enhance the way they deliver services to the user.

  One of the issues that vendors face as clients want closer relationships is how far to go in terms of a specific relationship: if a vendor gets too close to a particular customer or starts offering services in competition with its potential customers it could have a negative impact on the market.

- In the 1970s and 1980s outsourcing contracts were very much a change in operations rather than a change in architecture or strategy. At the most, changes involved the consolidation of like computer operations or perhaps the migration to a new equipment vendor or software package.

  Today, IS outsourcing is regarded as a major agent of change in organizations. Frequently, companies that wish to restructure their IS activities (perhaps to downsize; move systems to functional, geographic or product units; or both) have no way to move from point A to point B using internal resources only. They must outsource some activities in order to be able to make the change. As well as resources, the outsourcing agent provides the will and knowledge to accomplish the change. Often the need to accomplish such basic change is driven by the need to integrate IS with the minute-by-minute operation of the business and to do so at lower cost. The result is a changing market need and a business opportunity for transition outsourcing.

- The shift in the makeup of what is bought from information services vendors to include an ever-growing professional services component is another significant difference. These professional services include not only traditional system design and programming, but "upstream " (e.g., business consulting) and "downstream" (e.g., end-user support or customer services) services. The buyer is turning to a single vendor for the complete package of products and services.

- The result of these differences is that the vendor is now providing a more significant management element in the contract. The vendor interface is at the top of the client organization and includes operational, tactical, and strategic elements. The vendor is involved in planning, communicating, organizing, and controlling more than just the computer operations.

One consequence of the trends to include more management of IS and to provide a broader scope of service is that other software, services, and system vendors are seriously impacted by the outsourcing decision. The buyer is looking to reduce complexity and have one vendor to deal with. Once a decision to outsource is made, a single vendor is selected to provide all the required services (the ability to do so is, in fact, a primary qualification for consideration). Whether or not the vendor subsequently intends to use subcontractors is of little importance to the buyer.

A good example of what can happen to other vendors was the impact on professional services vendors in Detroit of General Motors acquisition of EDS. All their contracts were initially canceled or frozen.

E

IS Outsourcing Relationships

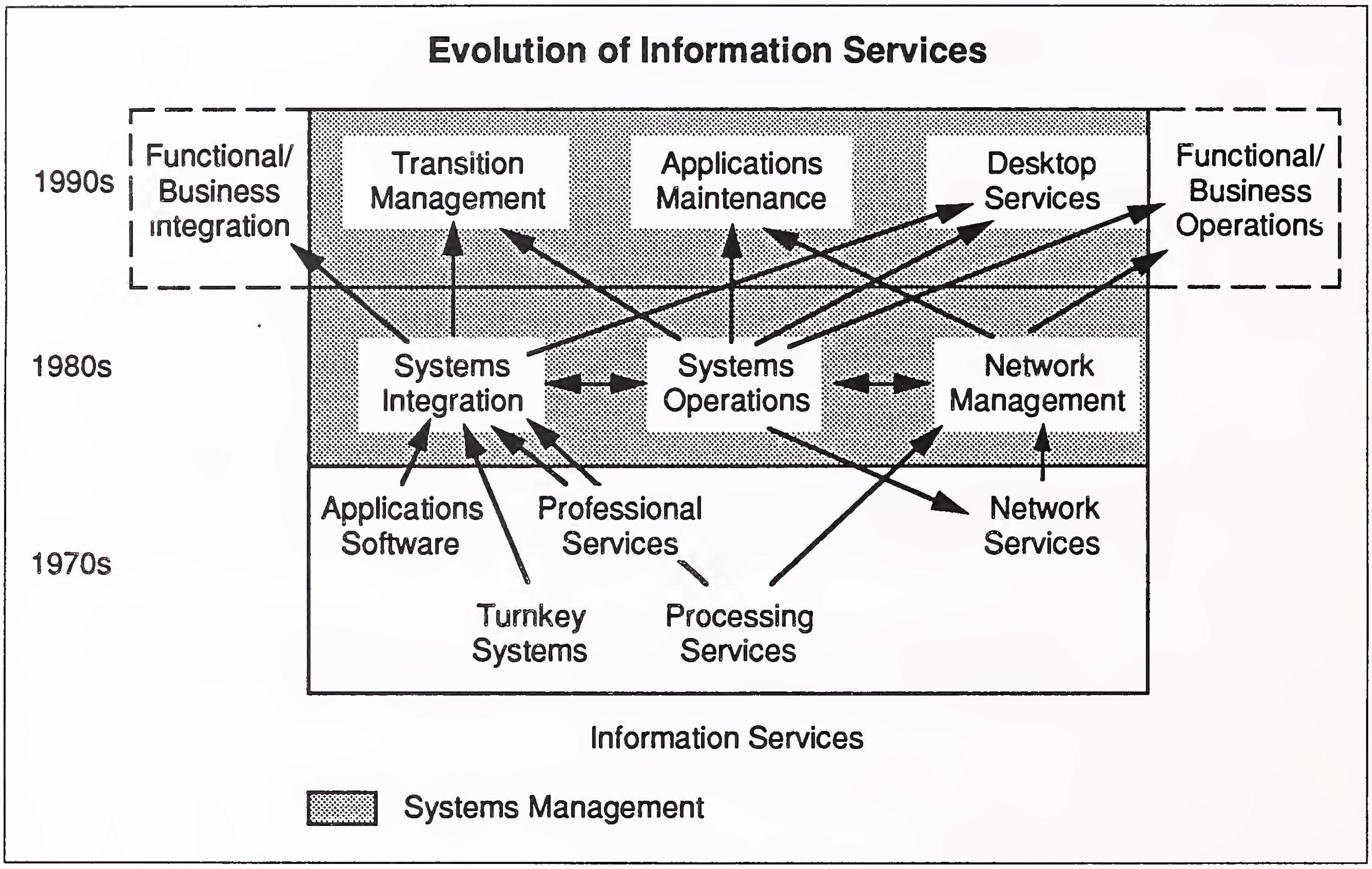
To help characterize the outsourcing trend, Exhibit III-11 draws relationships among the information services industry components and the types of outsourcing relationships that are becoming common between clients and vendors.

The services in the systems management box include the partnership commitment between vendors and users. Professional services, processing services and other services can be subcomponents of outsourcing relationships. Systems management relationships are still primarily focused on the IS functions.

- Applications management is the outsourcing of the applications development and/or maintenance/ enhancement function. The maintenance of the vast installed base of "legacy" systems is one of the greatest inhibitors to the ability of information systems to progress. Outsourcing can

focus on maintenance particularly if system re-engineering is required, thus freeing up internal staff for new development. Or it can focus on the new initiatives, particularly when major change over a long period is required.

EXHIBIT III-11



- Desktop services is a fast-growing opportunity that derives from the trends to downsize applications and to move them to the functional units. It is also driven by the increasing requirement for end-user support as the complexity at the desktop increases dramatically. Networks make desktop services both necessary and possible.

- Transition management is an emerging opportunity, as described above. Information systems departments are shifting technology, adjusting to mergers and acquisitions, consolidating data centers, and more. These shifts often take three to five years and offer the basis for a partnership with the vendor either managing the old systems, serving as a systems integrator to install the new systems, or both. Essentially, the vendor becomes the "agent of change."

- Systems integration is the combination of IS products and services to fulfill an IS project requirement.

- Systems operations is the operation of computer centers, related networks and, in some cases, applications management.

- Network management is the operation of the data communications network separate from computer center operations. It may include voice, text, and image with data. Voice-only network management contracts can exist but are outside the scope of IS outsourcing.

The two other relationships are focused more on the business than IS, although IS is a significant, perhaps dominant component.

- Functional or business integration (see Exhibit III-12) is the natural extension of system integration. Since there is little benefit to information systems changes without business or organizational change, it becomes necessary for vendors and IS organizations to deal with both sets of changes seamlessly. Project teams must deal with organization changes in policies, procedures, pay-scales, job qualifications and functions, employment levels, facilities, supervision, and management at the same time as information systems changes. At the extreme, construction and initial operation of a new factory would fit this definition.

EXHIBIT III-12

Components of Functional/Business Integration

• Personnel	Policies, procedures, pay-scales, employment levels, job qualifications, job functions, etc.
• Organization	Facilities design and acquisition, funding planning, staffing, equipment and services (non-IS) planning, selection and acquisition, etc.
• IS activities	

- Functional or business operations (see Exhibit III-13) similarly includes all aspects of the operation of the function, including all employee facilities and infrastructure processes. Again, at the extreme, operation of a factory or bank would fit this definition.

EXHIBIT III-13

Components of Functional/Business Operations

- Personnel—operating staff procedures, hiring and firing, training
- Organization—funds collection and/or disbursement, facilities operations, non-IS equipment and services management
- Communication—client reporting, government reporting, staff reporting, customer/vendor reporting
- Control—quality control, financial and operational control
- Planning—functional/business planning
- IS activities

Outsourcing is a relationship structure, not a specific mode of service delivery. It impacts traditional services as well as creating the opportunities for new and expanded services. It provides opportunities for users, vendors, and IS organizations.

IV

Outsourcing—Buyers' Perspectives

The previous chapter provided the framework for IS outsourcing and identified the key elements of the information systems and services arena that are different as we enter the 1990s. This chapter focuses on outsourcing from the buyer's perspective, including the following:

- Closer inspection of the driving forces
- Review of recent research on the evolving role of IS organizations
- Framework for mapping outsourcing to the IS strategy
- Identification of potential outsourcing opportunities
- Summary of attitudes toward outsourcing

A
Driving Forces for Use of Information Technology

The primary forces having an impact on larger organizations are well chronicled. As shown in Exhibit IV-1, today's business must deal with globalization, specialization, a rapid pace of change, and integration, if it is to succeed. Each of these trends is reshaping industry and business and is directly impacting information technology strategies and programs.

- Few industries are free today from international impacts. Market barriers are being removed in all corners of the globe, creating new opportunities and permitting the entry of numerous new competitors. Today's information systems (use of information technology) strategy must

  - Provide international access
  - Use international standards
  - Support international operations

- Competition, the tight economy, and restructuring problems are causing senior management to focus on the core of an organization's capabilities. The result is a more specialized and focused organization that emphasizes what it does best. Not only are organizations limiting the breadth

of their mission, they are focusing on the functions most critical to that mission. If an automobile company does not need to manufacture radios to maintain its product differentiation, it also does not need to operate its own central data center. Information systems programs must:

- Concentrate on strategic systems that support the critical functions

- Provide the most cost-effective methods of development and operation of IS processes at all levels.

EXHIBIT IV-1

Information Technology Driving Forces

Trends	Organization	Information Systems
Globalization	International opportunities and competition	International processing requirements
Specialization	Core business and functions	Strategic systems
Pace of change	Structural change	Rapid response and deployment
Integration	Intra-organizational relationships	Intra- and inter-organizational systems

- The pace of change in the world has never been more rapid. Certainly, information technology has been a factor in speeding up the pace, yet it remains the primary tool to help management deal with it. In the 1970s it was acceptable to take three to five years to build a major new system. Today it can be assumed that in three years the priorities will be different, the organization will be structured differently, and it is likely the system will not fit.

  - Today's IS program must be prepared to react rapidly to unplanned requirements, large or small.

  - Doing the routine work is important, but doing the unplanned is the measure of success today.

- Competing on a global basis, specializing as a source of competitive strength, and responding rapidly to change all drive today's critical requirement to integrate all aspects of an organization. Since the core of integration is the flow of information, the impacts on the IS program are extensive.

  - Internally, the information network must support the flow of the organization. Today's applications are described as large, complex, integrated, and cross-functional—but new applications are simpler, faster, and more controlled by users.

  - Externally, today's IS program must create interorganizational systems. The introduction of electronic data interchange (EDI) systems has won more than one IS manager a deserved promotion!

No large business or organization is free from unexpected, significant change today. Mergers, acquisitions, divestitures, leveraged buyouts, downsizing (reductions in work force), and re-engineering are all commonplace. These occurrences introduce a requirement for change into the information systems strategy that was not common just a few years ago. Change is a strong element of the equation that is driving outsourcing within the information systems arena today.

B

IS Organization in the 1990s

For years INPUT has been researching and identifying shifts in the role and priorities of information systems and the IS executive. Over the past three years, that research identified significant shifts resulting from the driving forces listed above and the explosion of information technology.

The impacts of these shifts are now being realized through such decisions as those made by Kodak, General Dynamics, and United Technologies regarding the outsourcing of their IS functions; manufacturers and banks hiring a single vendor to provide applications software, data, and network operations, and all maintenance; and IS executives saying publicly, "I don't ever want to manage a data center again."

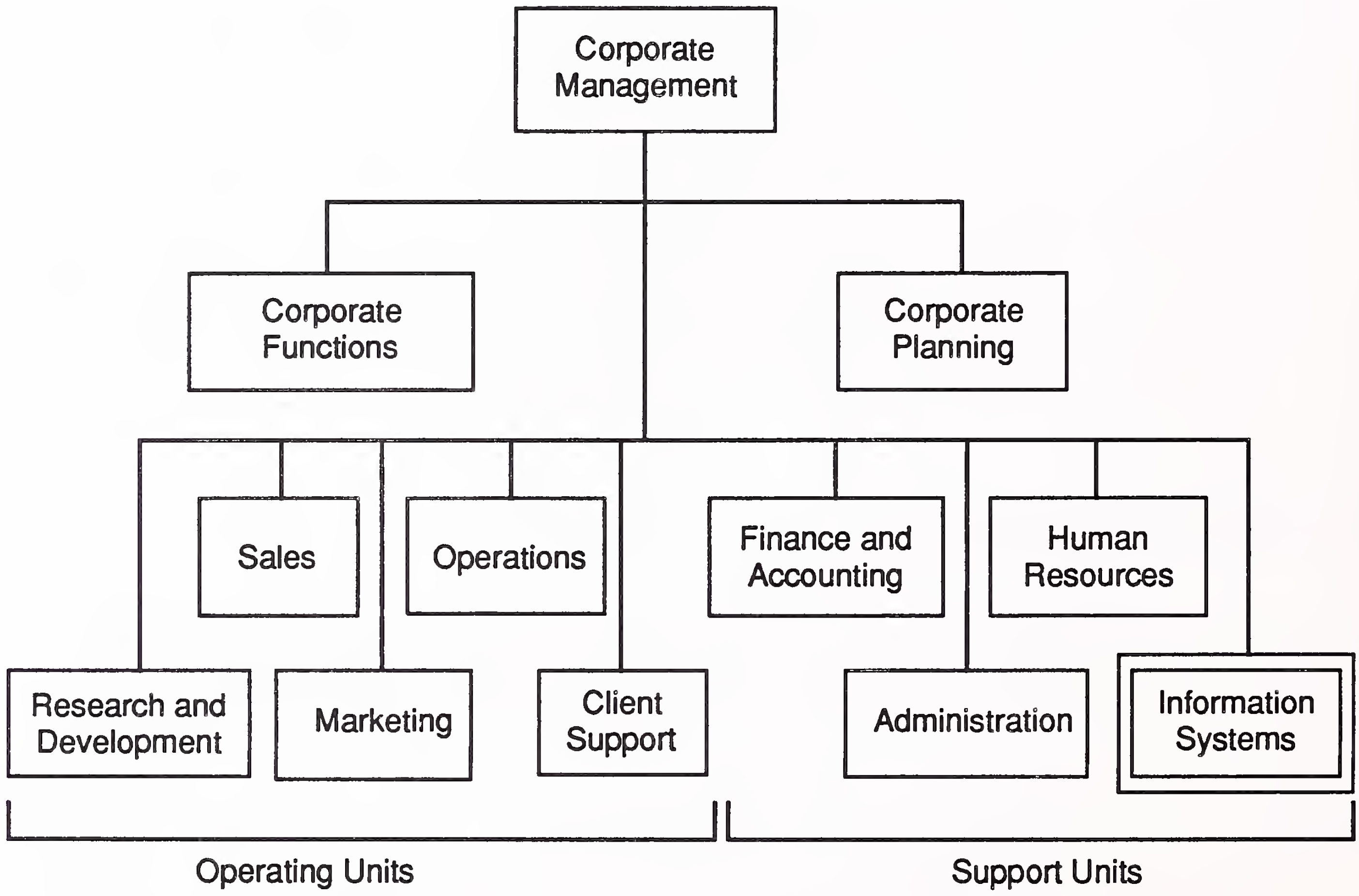
However, a more fundamental question must be asked, "Should a separate IS organization exist at all in the 1990s?"

The IS organization has consistently grown in size, status, and cost over the last 30 years. It is now a fully recognized service unit reporting to the senior executives or, at a very high level, to a chief financial or administration officer.

A typical organization structure is shown in Exhibit IV-2. Various aggregations may be made by geography or product line depending on the organization, but essentially the IS department is outside the operating units' control. It is almost always a cost center.

EXHIBIT IV-2

Organizational Position of IS Unit Present



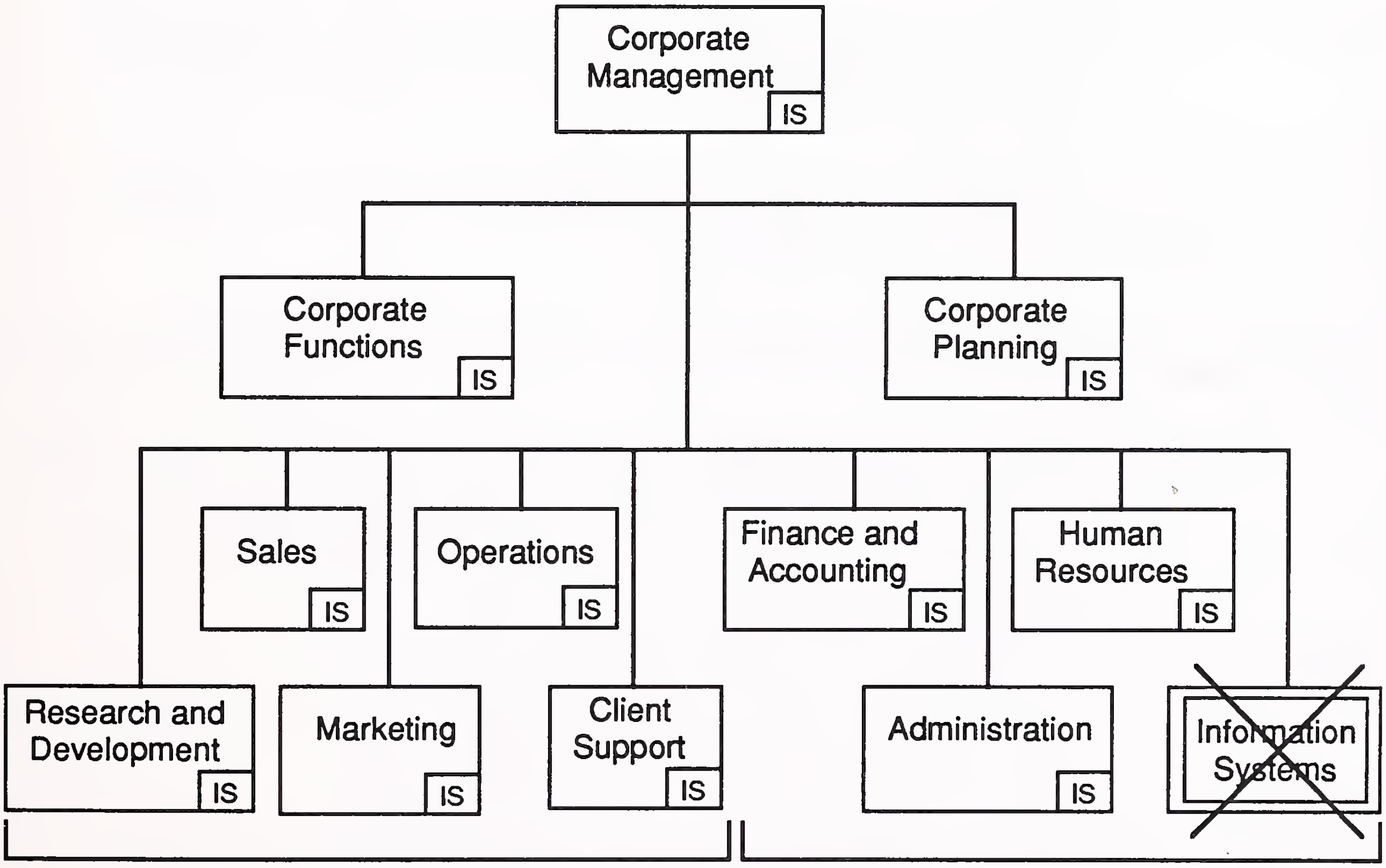
Yet in the 1980s, we consistently heard how important information systems were to the success of the organism as a whole. Concepts of "mission—critical systems," "systems for competitive advantage," etc., were introduced and adopted in large part by organizations. As executives in operating units come to believe these messages, they naturally seek more influence and control over "their" systems.

Another trend that became obvious in the 1980s was the increasing difficulty of separating computer systems from people systems. With network systems and more rapid information flow, the integration of people with their computer/communications support infrastructure has become symbiotic in operations as well as in development. Computer and communications systems by themselves accomplish nothing: they have to work with people to be effective.

A consequence of these two trends could well be the disappearance of the separate IS unit as we know it today, resulting in an organization structure depicted in Exhibit IV-3.

EXHIBIT IV-3

Organizational Position of IS Unit Future



Operating, support, and corporate units will take, and indeed are taking, back management of the development and operation of their applications. The only remaining separable tasks are those relating to interfaces among systems/units, planning, and corporate control. But even here, these functions can be absorbed in other service units fairly effectively.

After all, interface management, for example, primarily relates to timing, definitions, action reporting, contingency planning, and information needs; all these activities have to be coordinated anyway by units other then the IS department. If all we are considering are IS technical interfaces for software, network protocols, computer standards, etc., then the rationale for a separate IS department is eroded even further. These decisions could and probably should be made by the IS people within the units involved, not some expensive internal bureaucracy. Certainly the corporate assets need to be protected, but the corporate view can well be put by corporate planning and/or finance units.

If expert, objective opinion is needed it can be bought. Thus, the 1990s may well see the disappearance of the IS unit and the integration of IS functions with the operating, support, and corporate units in the organization.

There does exist a prior example of a similar evolution; that of electric power in the 19th century.

C

Analogy between Electric Power in the 1800s and Computer Power in the 1900s

In the industrial revolution, a power plant was built for each factory. This process was often carried over into other buildings including mines, government buildings, large houses, etc. These plants were used to initially provide power for work; heat, light, and ventilation came later. In many cases, gas was used for heat and light.

The plants operated on water power or on steam. Power distribution within a building was by means of cumbersome networks of pulleys, belts, axles, gears, etc.—in other words, mechanical means.

When electricity was discovered and applied, plants converted to it. However, there was initially no way to apply the right amount of power to each task (stepping down). So there was a combination of mechanical and electrical distribution in plants—but essentially still one central source. Characteristics of electric power use in the 1800s are shown in Exhibit IV-4.

EXHIBIT IV-4

Electric Power Evolution in the 1800s

• Mid-1800s	Plants/buildings/estates had own electric power generators
	Important separate unit
	Applications were lighting and work
	Usually driven by steam
	No transmission capability
	No fractional motors
	Mechanical local distribution
	Competing "protocols"
• Late-1800s	Transmission grids became available
	Standards emerged (AC over DC)
	Fractional motors applied appropriate power to tasks
	Dedicated power units disappeared a) generators b) organizations
	"Local-area networks" emerged

Because power could not be transmitted, it was thought that the cities where the fuel for the power units was located would grow substantially as factories and the supporting infrastructure were built there. Thus at one time in the 19th century there was a major argument as to which would become the largest city in the world: Buffalo, New York, with its access to hydro power from Niagara Falls, or Liverpool, England, which was on top of the world's largest known coal deposit!

As the requirements to distribute electric power to users became more pronounced, the need for transmission grids and standards grew. The choices in standards were not only between AC and DC distribution but also involved the number of cycles and voltage to be used.

Once these grids and standards became established, the need to have a power unit for each geographic unit disappeared. Plants could be freely moved. Eventually both Buffalo and Liverpool declined into secondary cities. Power management in an organization became an administrative function: in some cases, such as in an aluminum plant, an extremely important one.

Also, fractional motors allowed power to be applied to individual tasks from local networks.

Consumers, whether business or individuals, bought electric appliances with motors suitable for each task. The use of electric power became integrated into everyday functions of business and working life.

One can look at the emergence of the use of computer power since 1960 in an analogous manner as shown in Exhibit IV-5. Central power units grew ever larger through the 1970s and 1980s. However, in the 1980s we saw the emergence of the "fractional" motor of the information systems industry, the microprocessor or microcomputer. This enables the effective distribution of power in the amount needed to the point-of-work (POW).

EXHIBIT IV-5

Electric Power and Computer Power Analogs

Electric Power	Computer Power
Initially standalone generators	Initially standalone data centers
Standards (AC or DC) evolved	Standards evolved
Emergence of transmission grids	Emergence of networks
Step-down motor applied power to POW*	Microprocessor applied power to POW*
Provided physical illumination	Provides information (intellectual illumination)
Electric power application eventually absorbed by users	Computer power application eventually absorbed by users

*POW = Point of Work

Telecommunications networks that enable these POWs to be connected have also emerged. These networks provide interfaces between non-standard devices of various power as did electric power networks. Just as transmission grids enabled widespread use of lighting, so computer networks enable widespread use of information.

The analogy can be drawn further.

Initially the money to be made in the electric industry was in building electric generators for factories and other buildings. The utilities (electric power generating and transmission) companies then started to become larger customers for the manufacturers but also drove them out of the generator business.

The real money then was made in the application devices used for the myriad tasks to which human ingenuity has applied electric power. This is not so much in the small electric motors themselves but in the whole devices, e.g., ovens, drills, vacuum cleaners, etc.—in other words, applications.

In the computer industry, initially the money was made in the mainframe business. Now increasingly, profit is in the services and products that provide application of computer power directly to POWs. As with the fractional electric motor, there is not so much profit in the microprocessor itself, the "engine" for these devices.

Of course, the analogy can be drawn too far. There are substantial differences as shown in Exhibit IV-6.

However, electric power has been perhaps the most significant "driving force" in the growth of our civilization in the 1900s. Computer power may well be the most significant "driving force" in the growth of our civilization in the 2000s. Therefore, an examination of the evolution of electric power and its use can be valuable in predicting what will happen to the computer industry. Perhaps the computer utilities are already here: EDS, ISSC, etc.

EXHIBIT IV-6

Electronic Power and Computer Power Differences

- Electric power works with physical, tangible things
- Computer power works with intellectual, intangible things

- Application devices for electric power are physically driven
- Application devices for computer power are software, intellectually driven

- Electric power network is a one-way consumption system
- Computer power network is a two-way flow of information

- Electric power utilities were heavily regulated
- Computer power "utilities" are non-regulated

- Electric power "standards" varied by geography
- Computer power standards will be global (?)

- Electric power requires huge generating facilities and expensive physical distribution capabilities
- Computer power requires ever smaller and cheaper generating facilities and transmission capabilities

- Electric power is physically dangerous
- Computer power is intangibly dangerous

D
Role of the IS Organization in the 1990s

IS organizations (if they continue to exist) must adopt a significantly different style for the 1990s. As Exhibit IV-7 suggests, the IS organization of the 1990s must be

- Smaller, thus more flexible and responsive
- Expert-based, both in technology and the business
- Organized as consultants helping others to tap the benefits of information technology
- A promoter of information technology, not necessarily the implementer

The real job is to get the maximum benefit for the organization from information technology, both short and long term, by whatever means are available.

EXHIBIT IV-7

Future IS Unit Organizational Style

- Smaller
- Expert-based—technology and business
- Consulting style—information engineers and solution builders
- Marketers of technology

The primary roles of the IS function are described in Exhibit IV-8. IS management cannot ignore the more operational aspects of the information systems process, but with open-minded use of today's vendors' capabilities, they can switch the balance of their efforts in favor of strategy, architecture, verification of implementation, and the equipping of users.

- *Strategy* - This has always been an IS function, but not one that has been done well in many cases. It simply has not had time. Without a defined evolutionary strategy, new technology can't be assessed and appropriate choices made. Today there is nothing more important than identifying the next strategic information technology alternative.
- *Architecture* - Integration can't be accomplished without a technology plan or architecture. With an architecture it becomes easier to consider outsourced alternatives and new technologies, and it is possible to address unplanned, major requirements.

EXHIBIT IV-8

Primary Roles of IS Unit

Role	Description
Strategy	Linking information technology to business objectives
Architecture	Providing the technical infrastructure
Contract/Project Management	Overseeing the execution of major efforts
Organizational Behavior	Providing the people skills and environment for IT use

- *Contract Management* - Getting things done on time and on budget has not been a strength of IS units—yet today, more than ever, it is a requirement. IS vendors have learned how to do this, and IS units can learn from them. If the management skills are in place, then who performs the work is secondary to being sure it is performed properly. The vendor can manage the project and the IS unit can manage the vendor (or contract).

- *Organizational Behavior* - Today everyone is a "hands-on" user of information technology. From the executive suite to the factory floor, work patterns are being changed by information systems and their use. As the pace quickens, so does the requirement for behavioral support. Someone has to deal with the behavior and training aspects of IT. Who better than the IS function? It is now a full-time activity.

Successfully performing these four roles can increase the positive impact of information technology on the organization.

E

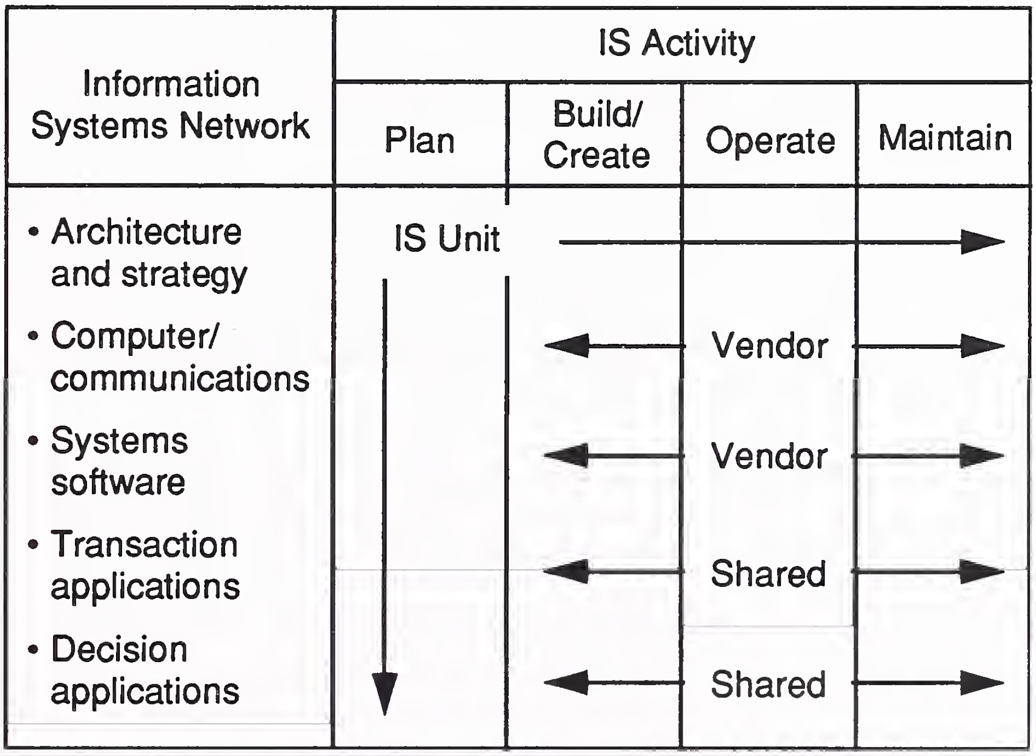
Information Systems Strategy and Outsourcing

1. Activity vs. Control

One way for the IS unit to consider outsourcing in a balanced manner is to tie it into the information strategy of the organization. In Exhibit IV-9, the activity of the IS unit has been divided into four elements.

EXHIBIT IV-9

IS Unit Activities and Outsourcing



- Planning and the elements of architecture and strategy should always remain within the purview of IS. They form the basis of control and, to the truly capable IS executive, are all that must be performed internally to meet the challenges of the 1990s.

  However, vendors should be involved in all phases of this activity so that the implementation activities are handled economically and effectively. The days of the IS unit doing all the planning, then telling the vendors, "Do this," are over.

- Vendors build and maintain the computers, communications facilities, and systems software. The renewed interest in systems operations/ facilities management is increasing vendor involvement and control over operation and maintenance of this element.

- Through the extensive use of applications software packages and because of the push towards systems integration, the vendor's role in applications is expanding. Either a vendor or IS can effectively build, operate, and maintain these elements of today's complex information network. However, the trend is to increasing use of external suppliers because of availability and costs of required skills

IS management should use this structure to evaluate forthcoming key programs. One result will be an assessment of vendor alternatives for more major programs. A second result could be better overall performance of the information systems function.

2. Impact of Various Types of Outsourcing

Each of the outsourcing and systems management categories in Exhibit IV-10 is classified by the value of impact it can have on the business relative to operational, tactical, and strategic activities.

- An applications operations vendor can provide advanced applications software while assuming full systems operations responsibilities, thus allowing IS management to focus on the goals of the business. This is proving to be an increasingly common approach in the banking industry, for example. The outsourcing decision can have significant benefit for all levels of the business.

- A platform operations vendor can free the internal technical staff to concentrate on future information technology strategy. It provides more effective day-to-day operation of the computer center and network.

- Desktop services really allow user organizations to be more effective. Their impact is at the user unit level; their corporate impact is the sum of the lower-level impacts. In aggregate, such services may have more impact than large, central services.

- In a technology transition situation, the vendor can assume day-to-day management of the older technology, freeing the internal staff to speed its acclimation to and implementation of the new technology. Thus, there may be little obvious operations impact.

- An applications management vendor brings knowledge to the development of new applications and support of the current application investment. It can be particularly effective when re-engineering of legacy systems is desired.

- A systems integration project typically has its highest impact and benefit at the tactical level. The new application solution will change how a process is performed and integrate the function more tightly with the rest of the business.

EXHIBIT IV-10

Business Impact and Level of Benefit of Types of Outsourcing

Category	Business Impact		
	Operational	Tactical	Strategic
Applications Operations	High	High	Medium
Platform Operations	High	Medium	Medium
Desktop Services	High	Medium	Low
Transition Management	Medium	High	Low
Applications Management	High	High	Medium
Systems Integration	Medium	High	Medium
Function/ Business Re-engineering	High	High	High
Function/ Business Operation	High	Medium	Medium

- A function/business re-engineering project has a more fundamental impact. It accomplishes the changes directly. Such projects are relatively few, but of critical importance. An organization only gets one opportunity to re-engineer; if it fails, it can be out of business.

- Function/business operations contracts do not necessarily impact the strategy level. They are undertaken for economic reasons and for immediate tactical benefits such as improved customer service.

By understanding the elements of the information systems program that IS must control, and recognizing where major programs will impact the organization, each new program can be assessed against the outsourcing alternative.

F
Outsourcing Opportunities

Exhibit IV-11 shows some of the needs that outsourcing can meet which may result in benefits greater than can be provided by insourcing.

G
Organizational Impact of Outsourcing

The organizational impact of IS outsourcing is at three levels as shown in Exhibit IV-12. At the overall organization level there may be very little obvious impact of IS outsourcing. After all, many IS organizations are geographically and functionally separated from the units they serve. Interfaces with the new provider of IS are couched in the same terms as before, i.e., report titles, telephone answering messages, etc., and still use the buyer's terminology, not the vendor's.

- One area of impact, and often an uncomfortable one, results from the allocation of staff to the vendor. Formal and informal personal linkages can be broken which have been built up over the years.

- Another impact area, linked to the previous one, is that changes must now be more rigorously examined and justified. The ability to have change made on an informal basis virtually disappears, or becomes very expensive. If rigor is obtained without bureaucracy, the organization can benefit substantially, if bureaucracy and delay results from outsourcing, then end user frustration will result.

- The impacts of outsourcing will be increasingly felt over time. In particular, the end user functions should see faster access to skills and new technology. Typically the vendor devotes more resources to R&D in IT and its application to the customer's business. Therefore it has answers to the technology and applications questions earlier than most internal IS units. Also the wider range of skills (in IT, IS, and business functions) available to the vendor enables answers to be obtained more swiftly. In a sense the customer now has access to a captive consulting organization.

EXHIBIT IV-11

IS Needs Addressed by Outsourcing

Need	Opportunity
Critical Application Development	Contract with applications management vendor to develop new applications and integrate with old
Data Center Consolidation	Use platform systems operations vendor to consolidate and operate with greater economies of scale
Lower Investment	Remove the computer systems and supporting assets from balance sheet by selling IS operation to systems operations vendor
Investment Deferral	Use a systems operations vendor to provide capacity rather than adding a computer
Reduce Operating Costs	Sell IS operations to systems operation vendor through aggressive bidding process
Transition Support—Applications	Use applications maintenance vendor while developing new systems internally
Transition Support—Operations	Use platform systems operations vendor to either take over existing operation or develop new operation environment
Advanced Technology	Use application systems operations vendor to obtain and apply new technology
Network Connectivity	Contract with network management vendor to develop new network and switch over from old
Reduce Staff	Contract with applications systems operations vendor to transfer development and operations staff

EXHIBIT IV-12

Organizational Impacts of Outsourcing

Group	Impacts
Total Organization	No visible impact Allocation of personnel More structured changes Faster access to skills More disciplined implementation
Information Systems Management	Manage a smaller organization Shift to tactics and strategy Time available for planning Shift to vendor staff Shift out of IS interface management
Information Systems Professional	Significant initial anxiety Shift from cost center to profit environment Greater career opportunities

- Another consequence apparent over time should be more disciplined implementation. A buyer/vendor relationship is different from an internal service relationship. The vendor must pay more attention to the details of implementation because if its services fail (through the user being improperly trained, for example), it may not get paid! Internal service units can simply blame the user. Again this disciplined approach can be perceived as tedious, but it protects both parties. It is the lack of this discipline that often causes internal IS activities to fail.

The IS management staff are the most affected by IS outsourcing. If they stay with the buyer their roles change substantially:

- Firstly they manage a far smaller organization. Order of magnitude reductions are common (from 200 people to 20, for example). This entails almost a total work-time reorientation for many managers who have an internal IS orientation. Those externally oriented IS managers who have primarily devoted time to their clients, external industry activities, etc., see much less impact.

- Secondly, their role changes. Emphasis must now be much more on the planning side of management. The organizing, communicating, and control aspects now lie more with the vendor. The planning is different also. It is not devoted to resource planning (people, computer, networks) but to applications and business planning.

- Time and effort must then be allocated to this planning process. If managers do not accomplish this effectively they will be fired. There is more exposure than in their previous internal structure. There is also more potential impact. Their time is now devoted to change rather than maintaining the status quo.

- IS management now also acts as the prime interface with the vendor. This interface is now almost a partnership, although there are very important control and evaluation elements that must not be abdicated. The partnership aspects are particularly important in communications—communicating with the user departments, personnel, external providers, clients, etc.

- The biggest impact is on those IS managers who switch from the internal staff to the vendor. Their measurement criteria are often very different as is their method of work. Many of these who make this change become very enthusiastic. They are, of course, self-selected so this is not that surprising. They feel they can now truly benefit from the knowledge they have gained in the internal environment and often achieve higher recognition with the vendor.

- There remain those IS managers, like Kathy Hudson at Kodak, who move upward aggressively in the customer organization. By outsourcing the IS activity they free themselves to take greater and broader responsibility than IS.

IS staff impacts vary. For many there is very little immediate impact. They may sit at the same desk, have the same managers, and deal with the same people as before. Others, of course, have fundamental job changes, in some cases including job termination.

- The most immediate impact is one of anxiety. This starts as soon as it becomes known that the organization is considering outsourcing. This is exacerbated if the probable vendor is one with a particularly "tough" reputation. It is imperative that vendors and the buyers deal early and

fast with this anxiety by clearly laying out the plan for the staff and commitments they will make. Otherwise, some of the best people (those that can easily find other jobs) will leave if they feel at all threatened.

- The long-term impact is the switch from an internal, cost-center orientation to a profit-motivated orientation. The concept of hourly billable time requires a major shift in thinking and orientation. The pace picks up substantially. Results become more important than the process. The ability to change and adapt becomes more critical.

- For many professionals, particularly the younger, upwardly oriented person, IS outsourcing often significantly enhances career opportunities if for no other reason than the vendor organizations are growing more rapidly than internal IS units.

- The more staid, "stick-in-the-mud" professional with 20 years of the same type of experience is likely to find the change very difficult and will probably not stay in the new environment. Both vendor and customer should probably expect a 30% turnover in retained staff within a year or so of the change.

Outsourcing vendors uniformly report success with the hiring of IS professionals from their clients following the signing of an agreement. Certainly not all can be offered a job, but those who receive offers frequently accept and have a turnover rate no higher than that of existing vendor employees. For the IS professional, working for a company whose business is information systems and services can bring far greater career opportunities than working for an in-house IS unit.

Vendors must identify preferred transferees as early as possible. Those who are overpaid or underqualified are also identified. The vendor helps the client address what may be a long-standing problem in these cases.

IS management should expect significant help from the outsourcing vendor in this area. Such vendors have experience to draw upon.

H

Buyer Attitudes toward Outsourcing

Although increasingly widely promoted as a key business concept, IS outsourcing still accounts for less than 3% of total IS expenditure in the U.S. and less than 1% in Western Europe. INPUT has examined buyer attitudes to determine why this penetration is so low.

1. Senior Executives' Views of Their IS Units

Key factors influencing senior executives when they consider the relevance of outsourcing to their organizations include the perceived value-for-money derived from IS in the past and their current degree of satisfaction with the in-house IS unit. Any management team which lacks faith in the effectiveness of its IS unit in delivering appropriate business solutions will be much more receptive to outsourcing approaches.

Overall, senior management feel that information systems have had the most significant impact in improving company efficiency and assisting in reducing business costs. Typical benefits claimed for information systems over the last decade include the reduction of paperwork and better management information leading to enhanced control of the business. Senior management also claim that their information systems have assisted them in improving overall company productivity and efficiency. While executives in the manufacturing sector claim improved inventory levels and manufacturing lead times, the claims for improved business productivity from information systems are most pronounced in the financial and business services sectors.

However they are less satisfied with IS contribution to administrative efficiency, operational cost reduction, and competitive advantage. One in five organizations is actively dissatisfied with these contributions. Obviously such users represent a target market for outsourcing vendors, provided that the vendor can convince the user that they are better positioned to make a business contribution than the in-house IS unit. At present, it is questionable whether senior executives regard information services vendors as part of the problem rather than part of the solution.

In a survey conducted by INPUT, 70% of senior executives were dissatisfied with at least one major element of their IS unit's performance.

Senior executives appear to be adequately, though not highly, satisfied with the performance of their IS unit in terms of

- Service delivery
- Development of new systems
- Return on investment

A significant proportion (about one in five) of senior executives are dissatisfied with each of these factors, and this represents an opportunity for outsourcing vendors. Where senior executives are dissatisfied with current service delivery performance, there is an opportunity for vendors to introduce platform operations. In cases where senior executives regard new systems development performance as poor, there is an opportunity for vendors offering the following:

- Application management
- Application operations
- Systems integration

However, the true Achilles heel of many IS units lies in the poor relationships established between themselves and their internal clients. Many IS units have been taking steps to manage this interface more professionally, for example, by appointing account managers to liaise with clients. Still, over a third of senior executives remain dissatisfied with the way client liaison is handled, and the in-house IS unit's understanding of, and response to, business needs.

However, in spite of these levels of dissatisfaction, senior executives are generally loyal to their in-house IS unit.

Senior executives consider the principal challenges for IS to be cost and communications related as shown in Exhibit IV-13:

EXHIBIT IV-13

Senior Executives' Challenges for IS Units

- Reduce IS costs
- Reduce business costs through use of IS
- Provide better management information and business support
- Assist in developing closer links with clients

The economic situation in virtually all industrialized countries is now having a major impact on senior executives' attitudes towards IS spending. Many new development projects have been postponed. Even potentially cost-saving projects such as major equipment downsizing have been canceled because of the initial high levels of investment required.

IS has always been seen by senior executives as a key tool for reducing business costs and improving productivity, and there is increased emphasis on this role. However, the IS unit is also now expected to make its own contribution towards overall cost savings. The principal challenge is for the IS unit to maintain or improve its service to clients while simultaneously reducing its own costs.

It is clear from the above that senior executives are, on average, only moderately satisfied with the performance of their IS units. Many senior executives are dissatisfied with either the delivery of existing services or the development of new systems, and over a third of senior executives are dissatisfied with the relationship between the IS unit and its clients. Now introduced into this scenario is the fact that many senior executives would like to reduce their IS spending. This appears to be an ideal situation for outsourcing vendors, yet the moderate success of outsourcing clearly does not reflect the high level of opportunity.

2. Attitudes toward Outsourcing in General

This level of user dissatisfaction with IS units could be expected to lead to much higher levels of outsourcing than presently exist. However, this has yet to materialize. The answer appears to lie in senior executives' perception that outsourcing services vendors are still primarily IS technicians with an inadequate understanding of the business need. A high proportion of large companies have already considered the option of outsourcing, with the majority claiming that it is not a suitable option for their organization.

The principal objection raised by those organizations that have rejected outsourcing as a viable alternative is the perceived high cost of outsourcing compared to in-house services as shown in Exhibit IV-14. This perception should concern outsourcing vendors. The principle of platform operations is its ability to guarantee service delivery costs for a period of years at levels equal to or below those which can be achieved by an in-house operation. So vendors should always be cost-competitive compared to in-house services when offering platform operations.

Application development is an area where services vendors are commonly perceived as being an expensive alternative to use of in-house personnel. However, taking into account the total employment costs for in-house staff, as opposed to the marginal costs of a development project, is this really true?

EXHIBIT IV-14

Principal Objections to Outsourcing

- Cost
- Loss of control
- Policy
- In-house expense

Loss of control is another major reason given by senior executives for avoiding outsourcing. This obviously depends on the attitude of the individual executive. There is a strong argument that it is actually easier to control external vendors than in-house staff due to the contractual nature of the agreement. However, executives may be nervous about awarding "open-ended" contracts rather than contracting smaller pieces.

IS managers are generally most concerned about losing control of IS strategy, project management, and systems specifications. They are less concerned about loss of control of

- Equipment operations
- Network operations
- Non-strategic systems development

Hence these areas may meet with less opposition to outsourcing.

Corporate policy is another objection commonly raised. While IS managers may use this objection simply as a blocking device to outsourcing vendors, it does appear that organizations take a formal stance at board-level on their attitude to use of outsourcing, with many companies taking a negative position.

The presence of in-house IS expertise also acts as an inhibitor to outsourcing. Many senior executives perceive that their in-house IS units, in spite of their shortcomings, have built up a level of understanding of the way the company carries out its business. Vendors are perceived to lack this detailed knowledge, which they would have to acquire at considerable expense.

The result is that, in large organizations at least, outsourcing will only be adopted in circumstances where

- The in-house IS unit lacks the capability or resources,
- The relationship between the IS unit and senior executives has been severed, or
- IS management is prepared to adopt outsourcing, as described above.

With regard to the last point, IS managers themselves are increasingly convinced of the trend toward outsourcing; nearly 25% of respondents to a recent survey identified this as a key trend.

The current economic climate and trend to downsizing also favor services.

There is a strong pressure on IS managers to reduce their expenditure while maintaining their service to clients, increasing the likelihood of the adoption of platform operations by those organizations such as the major financial institutions where downsizing is not perceived to be appropriate.

Some vendors target outsourcing around in-house IS competencies by identifying the following:

- The core applications of strategic importance to each company
- The remaining non-core, supporting applications
- Those applications where there is strong in-house expertise
- Those application areas where in-house expertise is weak

The vendor will then typically recommend that the IS unit continue to develop and support those core applications where there is strong in-house expertise, with all the remaining application areas being outsourced.

However, many senior executives perceive that their IS unit has a much better understanding of their organization's business than do outsourcing vendors.

3. Circumstances Creating Opportunities for Outsourcing

The major circumstance leading to outsourcing identified by senior executives is the inability of the IS department to provide the services required because of any of a number of factors as shown in Exhibit IV-15. This highlights a number of potential opportunities for outsourcing vendors since the ability of the in-house IS unit to service its clients is diminished by the following:

- Change in business focus
- Significant company restructuring
- Acquisition of new subsidiaries
- Downsizing or a dramatic change in technology
- Change in IS management

EXHIBIT IV-15

Reasons for Outsourcing—Executives

- Business expansion/major change
- Loss of key staff/facilities
- Service deterioration

Many IS units feel vulnerable to a change in company policy on outsourcing as shown in Exhibit IV-16. Changes in senior management, particularly a new chief executive officer, is the most probable circumstance in which this would come about. Company acquisition is another event which could stimulate fresh thinking. Other circumstances include the severance of existing relationships between senior executives and IS management, and a refocusing on the company's core business to the exclusion of IS activities.

EXHIBIT IV-16

Reasons for Outsourcing—IS Managers

- Change of corporate policy
- Loss of key staff/facilities
- Business expansion/major change

The need to increase substantially the systems development workload whether brought about by business expansion or changing business goals is another reason for possible adoption of outsourcing. However, it is probable in these instances that the workload would be satisfied more often using a systems integration service than an outsourcing approach.

Service deterioration was the other major driving force likely to lead to consideration of outsourcing by senior executives. However, it was observed in Exhibit IV-15 that senior executives already display quite high levels of dissatisfaction with aspects of the services currently supplied by in-house IS departments.

This presents opportunities for outsourcing vendors to demonstrate their capabilities in

- Improving the relationship between service providers and clients
- Improving service delivery
- More effective development of new systems

4. Outsourcing and Cost Reduction

Both senior executives and IS managers agree that the major challenge facing in-house IS units is the need to reduce IS costs.

The problem is that IS managers typically believe that the way for them to reduce their costs is not by reducing the delivery costs of existing services but by reducing their development activity and, where necessary, reducing the number of development staff. To the extent that IS managers recognize the need to reduce their service delivery costs, they favor options such as "lights out" processing and distributed processing over outsourcing.

One encouraging sign for outsourcing vendors is that a number of IS managers state that they would adopt outsourcing if it could be demonstrated to be cost-effective. Other IS managers state that there is a possibility of their adopting network management if their networks continued to expand and become too complex for them to readily manage in-house.

Nonetheless outsourcing vendors potentially have a significant role to play in assisting mainframe users to maintain their services to end users while reducing IS costs via services such as platform and network operations.

Implementing new systems is not currently a major priority for mainframe users. This could mean that many large IS departments will reduce their staffing in these difficult economic times, with the result being increased opportunity for outsourcing vendors.

Downsizing is considered a key trend for their organization by many IS managers (by 30% of IS manager respondents to one INPUT survey). This has several implications for outsourcing vendors.

- Firstly, it creates a large number of opportunities. At one level, downsizing creates transition management opportunities to manage the "old" systems while the in-house IS department concentrates all of its resources on the new systems. At another level, downsizing creates a discontinuity, and a need to retrain the IS department, which provides an opening for senior management to introduce applications operations services and move to a more complete outsourcing arrangement.

- Downsizing, on the other hand, is an alternative means of cost reduction to outsourcing and threatens to decrease markedly the market potential for vendors offering platform operations.

5. Effects of Buyer Attitudes on Types of Outsourcing

In large organizations, the rate of take-up of outsourcing has been significantly reduced by opposition from IS managers and the reluctance of most chief executive officers to impose its use. Accordingly the rate of take-up of differing types of outsourcing will reflect the level of resistance they meet in the IS community.

The types of service that meet the lower levels of resistance amongst IS managers are indicated in Exhibit IV-17, while the types of outsourcing service that typically meet high levels of opposition are listed in Exhibit IV-18.

EXHIBIT IV-17

Outsourcing Services Meeting Least IS Unit Resistance

Outsourcing Service	Level of Resistance
Transition Management	Low
Network Management	Low/Medium
Applications Maintenance	Low/Medium

EXHIBIT IV-18

Outsourcing Services Meeting Highest IS Unit Resistance

Outsourcing Service	Level of Resistance
Applications Operations	Very High
Applications Management	High
Platform Operations	Medium

Transition management may even be positively welcomed by IS managers, since it removes their burden of running and maintaining "old" systems, allowing the organization to concentrate on IS strategy and new systems development—its preferred activities. Furthermore, transition management may be perceived as posing little long-term threat to the in-house IS department.

Network management and applications maintenance are expected to show strong growth over the next five years as users become more confident in outsourcing these activities.

Network management is an area where many IS departments lack in-depth technical skills. Many wide-area networks that were initiated by in-house IS units are now reaching a size and complexity that makes them "unmanageable" in the absence of a unit dedicated to this task. Rather than set up such units, IS managers are often prepared to consider the use of an outsourcing vendor.

Application maintenance, namely the outsourcing of the maintenance of applications that were initially developed in-house, is a recent market development still in its infancy. However, application maintenance takes up a large proportion of IS departments' resources while being an unpopular activity with software development personnel.

The main pressures encouraging clients to outsource applications software maintenance and support include the following:

- Dependence on aging application systems
- Resource management difficulties
- Software staff discontent
- New business demands on staff
- "Holding action" during transition
- User discontent with quality of service

They are all primarily management issues, some resulting from technical difficulties:

- *Software*—Applications are becoming difficult to maintain because they are aging, skills have been lost, or languages and other systems software have become out of date. Managing the housekeeping of such software environments is a skill many IS departments lack.

- *Staff*—Retaining and motivating staff on "maintenance" projects can be hard as it doesn't have the glamorous image of new development projects. Outsourcing makes this someone else's problem, and frees staff to work on new business projects.

- *End users*—If the quality of service provided to end-users has declined unacceptably, the "hassle" resulting from their discontent, often resulting in new systems, can equally well result in outsourcing the support of existing applications. Giving end-users sufficient ownership and control over applications service stands out as a key factor in the success of any outsourcing service project.

The present economic climate provides the right environment for outsourcing vendors to market the benefits of applications maintenance services such as the following:

- Low-cost maintenance of existing systems
- High utilization of scarce in-house IS staff for new systems development
- Higher satisfaction from end users

However, vendors will need to overcome some reluctance amongst IS managers to openly admit to the problems they have in maintaining "old" systems. But, apart from the danger of embarrassment, maintenance management poses little long-term threat to IS managers.

Mainframe computers, with their complex operating systems, are particularly expensive to manage. Platform operations can reduce the costs of management and also their unpredictability. They can also reduce the uncertainties in operating large computer systems caused by factors such as

- Performance worries and the consequent need for equipment upgrades
- New versions of the operating systems
- Need to change operating systems, possibly imposed by the equipment vendor
- Recruitment, training, and retention of systems software specialists

As well as assisting in cost control, outsourcing of computer operations removes day-to-day management problems, such as absent operators and users complaining that their reports have not been delivered on time.

The present economic climate should favor platform operations since IS managers now have a strong need to reduce their costs while maintaining services, which is the principal objective of mainframe platform operations. Platform operations is likely to meet with a moderate amount of resistance from IS management. However, many IS managers state that they will adopt outsourcing if it can be proven to be cost effective, and a platform operations contract may well be the lesser evil when the chief executive insists on cost savings from the IS unit.

Both applications management and applications operations are expected to meet with very high levels of resistance from IS managers. Indeed, application operations is only likely if it is imposed by the chief executive officer of the company. Typically it will only occur in organizations undergoing dramatic transformations.

Exhibit IV-19 indicates the likelihood of large organizations adopting outsourcing. The organization will be more likely to adopt outsourcing the lower the in-house IS capability and the poorer the quality of the relationship between the IS department and its clients.

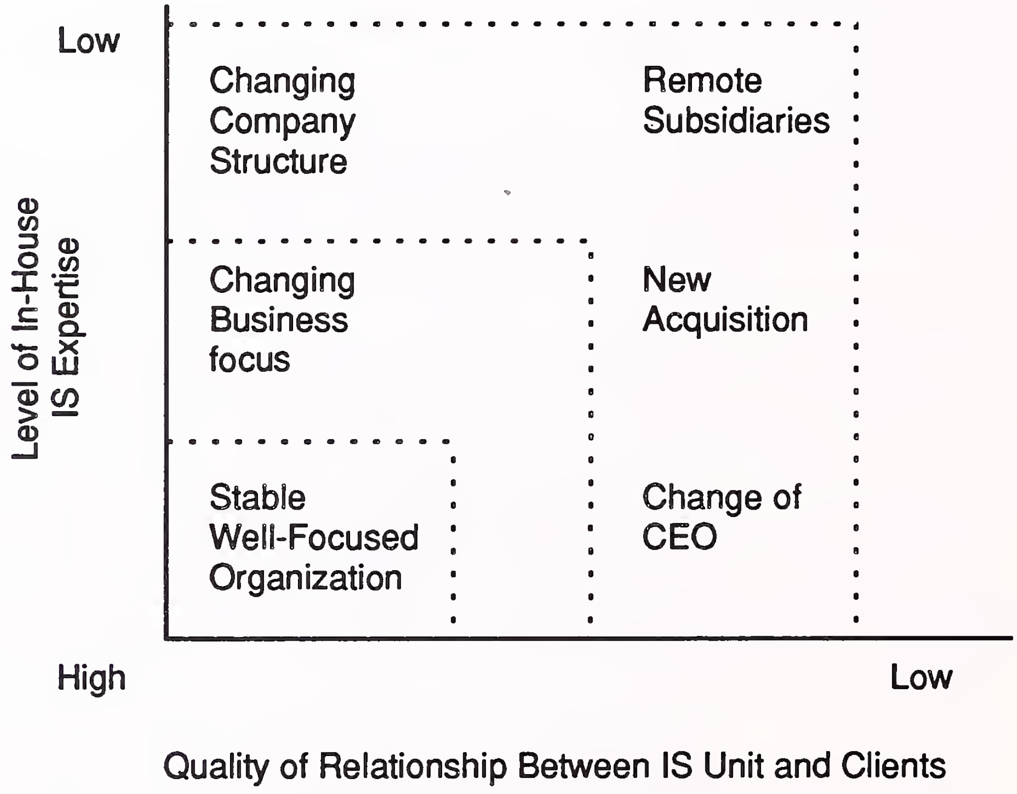
The subsidiaries of large conglomerates are typically good outsourcing prospects since a centralized IS unit may have difficulty in fully understanding their needs, give them a low priority compared to the core business, and be too remote to maintain a good relationship with the subsidiary's senior executives. Newly acquired or divested companies are also good outsourcing candidates.

A change of senior management can also lead to adoption of outsourcing, particularly if the new executive is known to favor outsourcing.

Company reorganizations and refocusing also commonly lead to outsourcing. Decentralization often necessitates downsizing and a realignment of IS systems. Depending on the severity of the company's problems and the attitudes of senior executives this can mean either transition management or application operations are adopted.

EXHIBIT IV-19

Identification of Outsourcing Prospects



Medium-sized and smaller organizations will typically need more assistance with application development and show signs of lower levels of opposition to application management and application operations. Accordingly, they may present the best prospects for outsourcing vendors emphasizing application operations. However, they may feel they are too small to finance outsourcing and need convincing that outsourcing is a cost-effective option.

V

New and Developing Outsourcing Opportunities

In the previous chapters we discussed some of the changes that are taking place in the environment and in outsourcing itself. This chapter presents a brief outline of a major extension of IS outsourcing which will occur in the 1990s: this is the emergence of business operations outsourcing.

We will also discuss forms of outsourcing that will benefit from the revolutionary changes occurring in the IS world today. These revolution in IS are

- Outsourcing
- Downsizing
- Networking
- Re-engineering

The general outsourcing revolution drives all forms of IS outsourcing, but it particularly affects systems operations. This is the area to which executive thinking automatically gravitates when the subject is raised. It is also the largest segment of the U.S. market as shown in Exhibit V-1.

Downsizing has a dual effect, as mentioned earlier: it is a threat to mainframe-oriented contracts; it is a very large opportunity for desktop services discussed below (Section C). It also provides some impetus for applications management or maintenance through transition management contracts.

The networking revolution is supported by quite dramatic changes in costs, performance, and availability of telecommunications facilities, particularly high bandwidth, low-cost transmission. But more fundamentally there are very strong business and social drives to be "connected." This revolution will drive network management toward outsourcing. It is also affected by the downsizing revolution, which establishes distributed centers of processing that must be connected.

EXHIBIT V-1

U.S. IS Outsourcing Markets, 1992-1997

Segment	Market Size ($ Billions)		1992-1997 CAGR (Percent)
	1992	1997	
Systems Operations			
- Platform	3.9	7.0	12
- Applications	5.2	11.5	17
Applications Management	0.5	1.2	19
Network Management	1.4	3.5	20
Desktop Services	1.2	4.5	31

Re-engineering primarily provides opportunities for systems integration and applications system operations. Transition management contracts of all kinds are supported by this revolution. There are two kinds of re-engineering to be considered:

a) Corporate/organizational re-engineering where the operating and support units are restructured. Often this restructuring involves considerable network changes to enable linkages to customers and/or suppliers to be established. Outsourcing in this area is application oriented.

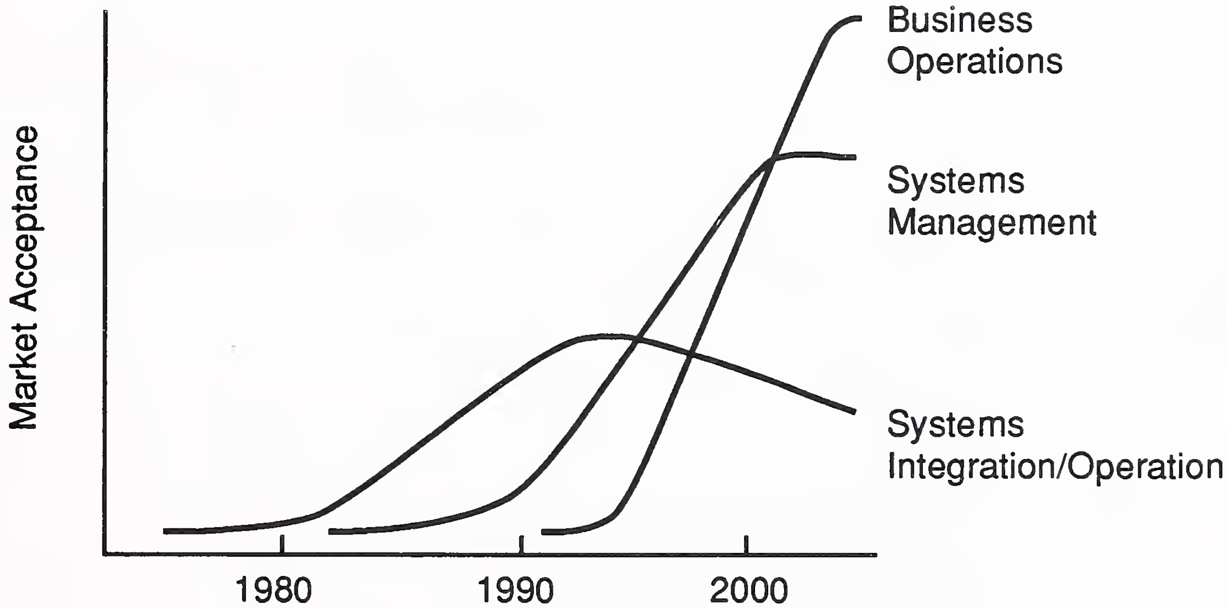
b) IS re-engineering where the IS architecture and systems are restructured. Outsourcing in this area is primarily platform oriented.

A
Outsourcing Market Waves: Evolution to Business Operations Outsourcing

There are waves of market acceptance of information services, as shown in Exhibit V-2.

EXHIBIT V-2

Outsourcing Market Waves



Prior to the 1980s buyers generally bought IS components: IS consulting, software development, timesharing, applications software products, computers, telephone lines, etc. They then assembled these components into systems that provided services to their clients: the operating units in companies. The degree of success they achieved was variable.

In the 1980s, increased pressures for success and reduced risk, coupled with more complexity and diversity of systems, caused the growth of commercial systems integration (SI) and then systems operations (SO). This wave started to grow in the 1984-1985 time frame. INPUT introduced systems integration "as the two magic words that will change the industry." Anderson Consulting espoused SI and started strong promotion efforts. This brilliant strategy was a fundamental reason for the emergence of Andersen Consulting as one of the most powerful forces in the IS industry.

In the late 1980s, SO grew out of facilities management (FM) to be the operational equivalent of systems integration. EDS had always been a leader in the FM business but now found itself joined by powerful competitors, notably IBM.

Again strong pressures of the various kinds discussed earlier combined to drive buyers into sharing responsibility for IS operations with providers instead of managing them on their own.

So the wave of system integration market acceptance as a separable business grew rapidly in the late 1980s. But it has now crested and is receding.

That does not mean that the SI and SO markets are declining. On the contrary they are still growing. But they are being absorbed into the next evolutionary stage, that of systems management (SM).

SI and SO are often still separate procurements. SI is project oriented. SO is process oriented but in the 1980s was often limited to data center and possibly data network management.

In systems management the buyer asks the vendor to take even more responsibility. The buyer expects the vendor to be a full partner in the provision of information systems of all kinds, at all levels in the organization. This is driven by the interaction of the components of the IS process. Historically, development and operations were separate components: mainframe-oriented "central" systems were handled independently of desktop "office" systems; R&D, engineering and/or marketing systems were independent of financial, sales, and production systems. This separability has now disappeared. All these components must work together; they are all changing all the time.

Thus the interaction between the buyer and the vendor is driven to an even larger total package, from system integration to system management. As reported earlier, a greater number of outsourcing contracts are including development, end-user support, all telecommunications networks, desktop services, and data center operations.

This is systems management—an envelope for all the outsourcing and SI activities. The system management wave builds on the SI and SO wave. It is now taking off. Again Andersen Consulting and EDS are leading the way. Andersen Consulting no longer talks about "systems integration" as its basic service; it now stresses "business integration." Both companies now view SI or SO as only part of the solution. They are both moving strongly in SM and beginning to position themselves for the next wave.

The next wave in the outsourcing market revolution involves a major change in thinking. This is the step from outsourcing information systems activities to outsourcing a business or functional operating unit for a customer, including its IS activity. It is the "business operations" wave, and its drivers, shown in Exhibit V-3, are fundamental to the use of outsourcing.

EXHIBIT V-3

Drivers to Business Operations Outsourcing

- Required demonstration of effectiveness of vendor products/services
- Integration of IS with business functions
- Customer focus on core value
- IS solutions replaced by business solutions
- Vendor expansion of business opportunity

This is not an easy step for an IS services company to consider. It involves far more responsibility and also dealing with people and organizational issues outside the IS area. Many people are not comfortable with this concept.

In one recent interview with a major information services company, INPUT asked about the skills in manufacturing that it possessed. In some discrete manufacturing industries this company claimed a complete set of skills and capabilities existed within its own organization supplemented by a few consulting partners. It covered product design, manufacturing engineering, shop floor design and management, materials planning and management, quality control, manufacturing resource planning and control, distribution, labor scheduling and reporting, financial management, logistics, etc. Not only did it claim the systems capabilities and knowledge but also the installation, training, and operational management capability.

There was nothing in a manufacturing plant this company claimed it could not deal with. Yet when we asked the vendor if it would consider offering to outsource the operation of a complete manufacturing plant it said, “no!” When we asked why not, they replied they were not sure they could make it all work! Our reply then was that if they were not sure they could make it work why should any buyer buy any part of their products or service portfolio?

In the 1990s a qualification for consideration as a major IS supplier to any business function will be an ability and willingness to outsource that function. This is the ultimate demonstration of the vendor's belief in the value of its products and services. The customer in most cases will not choose to buy the complete outsourcing service, but the fact that the vendor is prepared to step up to that prospect provides the buyer with the security that

a) The vendor truly believes in its products and services and is prepared to "put its money where its mouth is," and

b) It can expand the services and products it uses from the vendor, if necessary, in a seamless manner up to, and including, outsourcing responsibility for the whole operation.

A key driver, then, to business operations outsourcing is the vendors demonstrating the required capability.

Another driver to this outsourcing wave is the increased integration of IS with the business function. As explained in the previous chapter, IS and functional development and operations are becoming inseparable. Therefore systems management as a separable business will eventually disappear. There may exist a residual market for a computer utility, but this will be commodity—priced with little value added—and in any event will probably be embedded in the network. In the absence of regulatory protection, the telecommunications companies will be the primary suppliers. Certainly this SM wave will last a long time—well into the 2000s. But it will be overtaken by the business operations wave as all such operations become more IS intensive.

The increased customer focus on core value will also drive this wave. Every major company has to choose its most important capabilities and emphasize them. In some cases these may be product creation and design, in others operations efficiency and quality, in yet others distribution and client support, etc.

It will not be obvious which core values a given company may select. For example, there are many "manufacturing" companies for whom manufacturing is not a core value. Nike, for example, does none of its own manufacturing: it is a product creation and marketing company. Cosmetic manufacturers are marketing companies. Apple Computer is primarily a software company.

So it may well be that a manufacturing company would outsource its manufacturing operations to a vendor with a high-level of skill in the integration of IS with manufacturing. A hospital owner would outsource the operation of a hospital to a company with a high-level of skill in the

integration of IS and medical technology with hospital operations. An insurance company would outsource its whole claims processing function to a vendor that could integrate image processing with claims evaluation and payment.

In the case of the insurance industry. EDS has been outsourcing business operations for many years. It takes over the complete claims processing activity for Medicaid in a number of states; it employs clerical workers, doctors, and nurses as well as information systems staff. It manages the complete operation.

Of course, this move by IS outsourcing vendors into business or functional operations moves them into different competitive environments. The buyer values will be different. Fundamentally they are not interested in IS results or solutions; they are interested in business results and solutions. This is consistent with the IS/functional integration discussed previously.

The decision process will be particularly tricky for vendors servicing information-intensive industries such as banking and brokerage. At what stage do they get into competition with their clients and become banks or insurance companies? Already companies such as SEI and FFMC are skating on the edge of this conflict.

However, vendors will either have to move forward or backward from the SM position. The attraction of moving forward will be the expanded business opportunity inherent in business operations.

It is simply a question of potential market.

Typically an organization spends between 0.5% (for some process manufacturing companies) to 15% (for some financial institutions) of its costs on IS. But its operating expenses may be 50% to 70% of total costs, excluding sales, G&A, etc. Thus the potential market for business operations that are IS intensive may be 5 to 10 times the size of the IS market serving them.

Thus a company that may award a $20 million SI contract may be able to award a $200 million, 10-year SM contract or a $500 million to $1 billion business operations outsourcing contract.

B

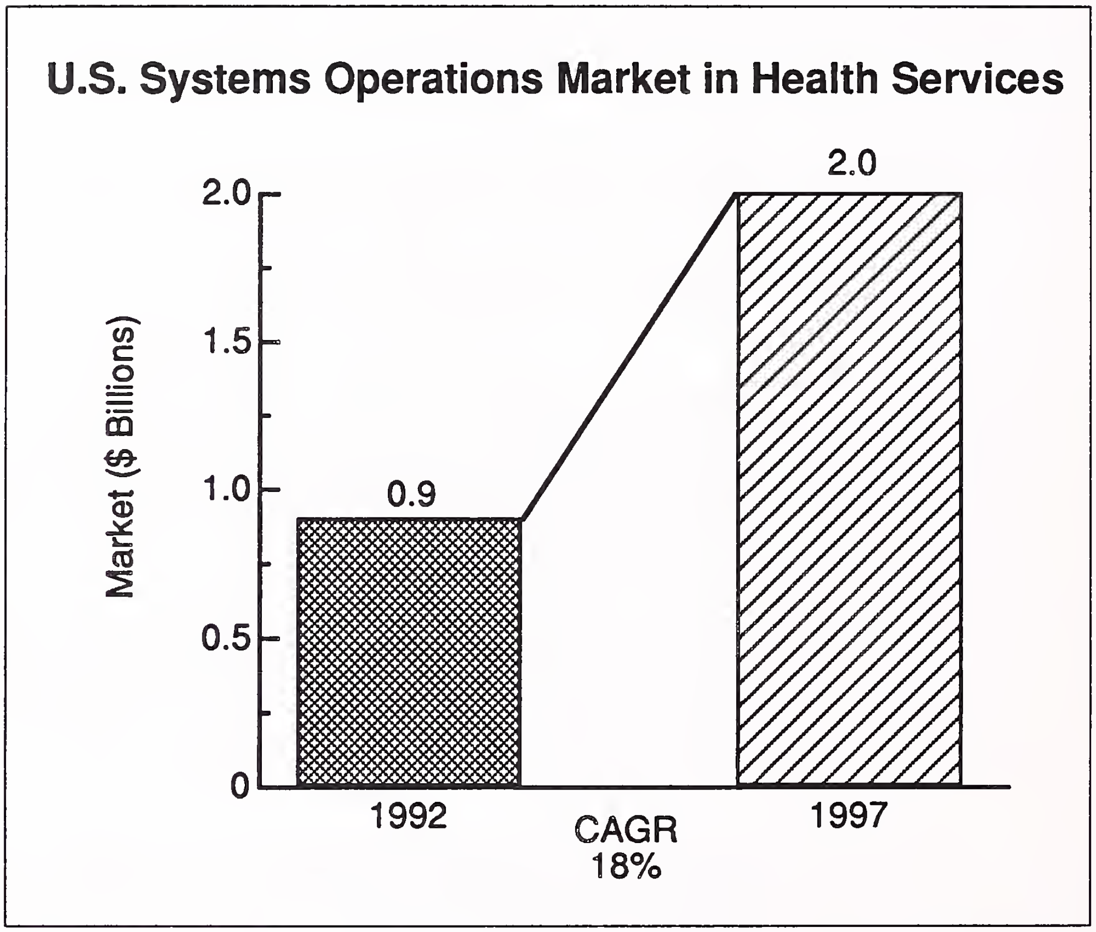
Business Operations Outsourcing in the Health Care Industry

It is commonplace for IS outsourcing vendors to look at their competitors and their activities in industries in which they compete. The purpose of this discussion is to show how IS outsourcing might be regarded in a broader context, at least within this industry sector.

1. IS Outsourcing in Health Care

The relative scale of IS outsourcing to the total industry in quite small. As shown in Exhibit V-4 the systems operations market in health services (the major outsourcing market) is under a billion dollars in size. The major vendors are Shared Medical Systems and First Data Corp. (American Express based on the services acquired from McAuto.)

EXHIBIT V-4



Overall expenditures on health services in the U.S. were over $670 billion in 1990 over 12% of the GNP in the U.S. They may reach as high as a third of GNP by 2000 if the trend continues.

Major factors affecting the growth of systems operations and other services in this market are listed in Exhibit V-5. The most pervasive factor is the pressure to contain costs that is coming from government, business and the insurance industry. However, health care providers are resisting the pressure primarily because their customers are pushing them in the other direction.

EXHIBIT V-5

Health Services Market Factors

- Cost containment pressure
- Increasing outpatient services
- New services needed
- Equipment downsizing
- Limited in-house expertise
- Expanded use of services
  - People living longer
  - Better diagnostics
  - Social trends (addiction/AIDs)

One way the industry is adjusting is by the increased use of outpatient services. This trend is being fostered by technology change that makes it possible to provide many more treatments on an outpatient basis. It also has strong business drivers.

These are similar characteristics to those that drive IS outsourcing.

Costs are being driven up by the range of new services that are needed and being provided (AIDs treatment for example) and by increased use of existing treatments (drug addiction and geriatric care). People, after all, are living longer and machines need more maintenance and breakdown more frequently as they age!

In IT terms, downsizing is having an impact particularly in hospitals. However, there is very limited in-house expertise in hospitals to deal with either the old, established systems or the new, downsized systems.

2. Business Operations Outsourcing in Hospitals

These are already business operations contracts to hospitals and have been for some time. Of the nearly 7,000 hospitals in the U.S. some 550 are operated by contract management firms. About half of these are operated by HMC.

HMC provides its client hospitals with full-time support of hospital administrators and controllers as well as a comprehensive range of hospital systems and services, including information systems. Under the direction of a client hospital's governing authority, HMC assumes full responsibility for the hospital's day-to-day operations.

HMC also has a consulting group that works with hospitals that are not business operations clients. These consultants have areas of expertise that include reimbursement assistance, government relations, strategic planning, financing alternative and marketing.

Reasons for hospitals to contract with HMC are listed in Exhibit V-6. HMC brings in quality managers to address these needs and supports them with services and staff to address the client's specific weaknesses. As economic pressures have increased, triggered by rapidly changing government regulation and market shifts, hospital boards of directors, generally made up of medical professionals, have found they are not prepared by experience or expertise to cope with these changes. They have also found it extremely difficult to recruit and retain the quality professional managers that even small hospitals now require.

EXHIBIT V-6

Reasons for Hospital Management Contracting

- Gain management expertise
- Increase physician recruitment
- Replace administration
- Reduce expenses
- Environmental change

HMC charges a yearly fee for service and typically signs a contract for three to five years. It has a retention rate in excess of 90%. Revenues of the hospitals managed by HMC are over $4 billion.

Another company that offers management services to acute care hospitals in the U.S. is Quorum Health Group, Inc. Quorum, which had final 1992 revenues of $173 million, owns four hospitals, manages under contract about 250 hospitals, and provides management services to an additional190 hospitals.

3. Diagnostic Imaging Outsourcing Services

Individual functions can be outsourced in this industry. One area is that of diagnostic imaging services.

Diagnostic imaging systems facilitate the identification of disease and disorders at an early stage, often minimizing the amount and cost of care needed to stabilize or cure the patient and frequently obviating the need for invasive diagnostic procedures, such as exploratory surgery. Diagnostic imaging systems are based on the ability of energy waves to penetrate human tissue and generate images of the body that can be displayed either on film or on a video monitor. Imaging systems have evolved from conventional x-rays to the advanced technologies of MRI, CT, echocardiography, nuclear medicine and ultrasound.

The diagnostic imaging industry is a $50 billion a year industry in the U.S.

Imaging systems are highly dependent on computers and sophisticated software to generate the images and enable diagnosticians to view and manipulate them.

During the past ten years, the diagnostic imaging industry has experienced substantial growth as well as a major shift from inpatient- to outpatient-based provision of services. The following trends have contributed to this growth:

- Advances in technology, particularly in the area of MRI and ultrasound applications, have widened the scope of available procedures. In addition, improvements in computer hardware and software, coupled with improvements in the basic MRI hardware, have cut MRI procedure times and have led to an increased capacity of MRI units.

- Cost containment pressures. As the cost of inpatient health care has escalated, both public and private payors have increasingly sought ways for services to be provided on a less expensive basis. Furthermore, changes in Medicare reimbursement policies have resulted in declining profit margins for many hospitals, thereby reducing capital available to

purchase new and expensive equipment. Other changes have reduced the amount of capital cost reimbursement available to hospitals, thus reducing incentives to purchase or lease equipment and the ability to pass such costs through to Medicare.

- Growing acceptance of outpatient medical services. Outpatient care has gained increasing acceptance from physicians and patients over the last decade. Outpatient services have proven to be a convenient, cost-effective alternative to hospital care, while maintaining the same level of quality. The growth in the types and volume of outpatient services provided has heightened physician, patient and payor awareness of these services.

The outpatient diagnostic imaging services industry is highly fragmented, with no dominant national imaging services provider. There are an estimated 1,200 freestanding outpatient imaging center in the United States, of which approximately 700 are estimated to be owned by physicians or physician-affiliated entities.

One company in the business, ImageAmerica, provides diagnostic imaging services through ten diagnostic imaging centers and over 190 other locations in physician's offices, hospitals and medical office buildings. In these latter locations, ImageAmerica is essentially providing outsourcing of certain diagnostic imaging services.

The company has grown, primarily through acquisition from $13.5 million in revenues in 1989 to over $52 million in 1991.

This type of computer-based, mission-related outsourcing will increase rapidly in the 1990s.

C

Desktop Services Outsourcing

Although long-term business operations outsourcing may have the most potential, perhaps the most significant opportunity for outsourcing today is in desktop services (DTS). This outsourcing service can include a variety of functions, as shown in Exhibit V-7.

EXHIBIT V-7

Elements of Desktop Services

- Equipment and software product purchasing
- PC/workstation maintenance
- PC/workstation software management
- Client/server management
- LAN management
- LAN/WAN interface management
- Distributed data base support
- "Help desk" functions
- User training and support

Open systems and downsizing are factors that have a considerable impact in this area. Downsizing is now the solution of choice to many information systems problems. Cost pressures and technological breakthroughs are making it attractive and practical to shift many applications from a large platform to a smaller one. That may mean from a mainframe to a minicomputer, a minicomputer to a microcomputer, or directly from a mainframe to a microcomputer.

Outsourcing vendors appear to have found at least one way to turn this phenomenon to their advantage. The major vendors are providing desktop services as part of their product offerings, together with, or separate from, their traditional outsourcing services.

The problem is that in "downsizing" and distributing a computer system through an organization, organizations actually may be increasing the total cost of information system. And this new environment has not been managed before, internally or externally. A combination of end-user computing (hitherto largely decentralized) and central systems skills are necessary, including

- Logistics support—"roll-in/roll-out" of hardware and software. Who has what systems in what configuration? This data needs to be available to a support organization that can assist the end-user.
- Help function—at the technical and application level on a continuing basis, includes data bases of problem occurrence and solution.
- Implementation and conversion—including site preparation, cabling, power supply, ergonomic design, and other capabilities.
- Training and education in basic skills and customer-specific skills.
- Equipment, network, and software selection, purchase, and distribution. At this time much of this activity has either been centralized (from a standards and procurement viewpoint) or provided by a vendor (often local retailers working with the local unit). A key element has been testing and "burn-in" of components.
- Handling of systems upgrades; this is a very difficult process in most companies because of the variety of platforms used.

Organizations are attempting to connect the multiple systems they have in end-user hands. Often without sound justification, it must be said. This involves substantial investment. After all 10,000 PC's or workstations cost, fully configured, perhaps $50 million, and by the time they are "rolled out" they are at different levels of "currency" (in technical features). It's like painting the Golden Gate Bridge: by the time you finish you have to start again.

Security is an additional feature of such a service. Organizations that are moving into the network world do not recognize adequately their exposure to viruses and other potential problems.

There is not an analog in human society for the type of structures we are building with these computer networks. The devices attached are not like TV sets, washing machines, or anything else because they have the power to feed back into the community and to change it. Furthermore, their use is not static—it is constantly evolving.

Certainly the IS organization, particularly end-user computing units, have some of the skills to support the new environment. However, they may not be the "vendor of choice" in the eyes of the end-user department. Also it is the area most fraught with potential for complaints and unpredictable demands. After all, who does a senior executive call when their computer won't work? The IS department!

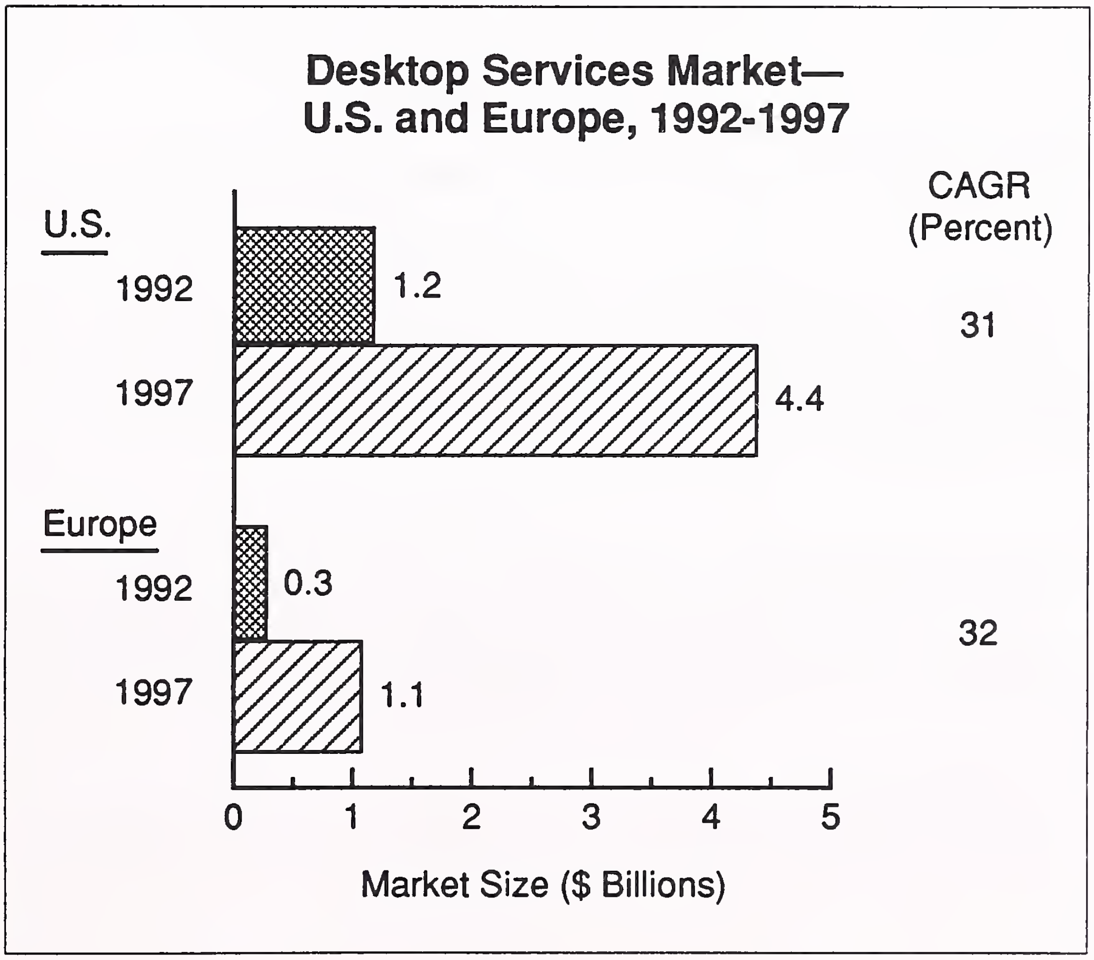
This issue is critical. The user on a PC in a downsized environment is much less sophisticated than the technical people involved in mainframe applications. Yet their needs may be just as important. They are also, by definition, more diversified by geography, experience, age, knowledge, and interest.

Therefore many IS and user departments will be quite willing to use a third party with expertise. Users themselves are not enthralled by the prospects of setting up their own IS organizations to provide the support their downsized client/server systems need. But they are learning that there are significant responsibilities and needs entailed by the new IS environment.

Thus, an opportunity exists for major services contracts in this area to solve the critical problem that face users as they attempt to integrate the heterogeneous collection of systems by age, platform type, and capability that exist in their organizations.

This market will grow rapidly both here and in Europe, as shown in Exhibit V-8. Japan and other country markets will grow more slowly. This growth may be an underestimate of the market. In future the largest suppliers of PC and LAN products to corporations may be DTS vendors. They will not just supply service but also equipment and software.

EXHIBIT V-8



As they penetrate this market, the larger companies may, if they are not already, become PC "manufacturers." Since most PCs are based on standard components (motherboards, power supplies, disk drives, screens, controllers, chassis, etc.), it is a relatively simple matter for these organizations to have systems assembled to their and their customers' specifications, thus cutting out intervening distribution channels. Maintenance will be the same as for systems from standard computer suppliers. These DTS vendors do not need the manufacturers' support and help-desk functions; they provide them to clients. Also, they already have to test and burn-in software and accessories.

1. Examples of Desktop Services Contracts

Exhibit V-9 lists several examples of outsourcing contracts for desktop services or with a large desktop service component.

EXHIBIT V-9

Examples of Desktop Services Contracts

- Businessland (JWP)/Kodak
- DEC/Blockbuster
- EDS/GE
- EDS/Army (SMC)
- EDS/Atlantic Richfield
- ISSC/Zale
- P&P/ICI (U.K.)
- P&P/Unilever (U.K.)
- Raet (ICG)/Rabobank (Netherlands)

One of the first outsourcing contracts for desktop services was Businessland's agreement with Kodak to provide all PC needs for all of Kodak's locations nationwide. It was negotiated just after the IBM and DEC outsourcing contracts, so it has been in operation since late 1989. Reports are that the relationship has been successful for both parties.

DEC won a contract with Blockbuster Video in 1990 that gave DEC responsibility for all new installations and implementations, as the fast-growing video store chain expands its operations in the U.S. and Europe. DEC maintains the inventory of equipment, and is responsible for the shipping, burn-in, help-desk support, and training of the store owners. This contract is an example of international outsourcing that requires a company with the international presence of DEC to execute.

EDS cut its teeth in desktop services with the large SMC contract with the U.S. Army. The high volumes and tight schedules required careful management of assets over a wide range of locations and operating environments. EDS has another much smaller contract to provide this type of service to Atlantic Richfield in the commercial arena. But it was the GE contract, announced in late December 1991, that turned heads and made other vendors take notice of the potential of this segment of the outsourcing market. The GE arrangement, involving up to 90,000 PCs, is estimated to be worth over $500 million over the five-year term of the contract. It is an outsourcing contract solely for desktop services. It includes the setting of standards of PCs throughout GE, the central procurement function, user support, and equipment installation.

A significant benefit for EDS is that it already provides desktop services to GM, thus giving it a large base of skill, knowledge, and capability to support its market activities.

Desktop services are not always standalone outsourcing contracts, but can be part of a larger contract. Although not much noticed, ISSC is responsible for 16,000 PCs in the Zale Corp. contract. INPUT believes that this will be the evolving pattern; namely, that desktop services will be included as another service outsourcing vendors provide as part of a comprehensive contract.

P&P's contract with ICI (about $20 million per year) involved the transfer of 90 staff. Two other contracts with Unilever and TSB (a large bank) involved the transfer of 12 and 23 people, respectively. P&P was originally a distributor of microcomputer products that established a dealership targeting the Times Top 100 companies in the U.K.

It has expanded from this base into the DTS market. One of its major strengths is its portfolio of 9,000 software and hardware products in the PC and UNIX environment, each of which it claims to have evaluated.

Raet is a member of the ICG Group which was founded as a joint venture among three PC dealers and has expanded its coverage to 10 European Countries. The ICG Group had 1990 revenues of $1.6 billion. Several other group members have substantial DTS contracts.

2. DTS Vendors

Some of the current outsourcing vendors are better prepared to provide desktop services than others. Obviously, EDS and DEC are demonstrating that they can do it now. ISSC certainly has the resources to operate in this market segment.

In its recent reorganization and restructuring, SHL Systemhouse has created a strong unit that can take advantage of the Computerland stores it owns in Canada and elsewhere to address the desktop services needs of its clients. Systemhouse is particularly well positioned to prosper in this market.

Bell Atlantic already has a strong reputation in the third-party maintenance and support market and can successfully leverage this into a number of outsourcing contracts. It has been looking at the outsourcing market in general for some time but has yet to penetrate any segment.

Integris has publicly stated that it is concentrating on the systems integration market exclusively, and its market strategies and recent contract awards reflect this orientation. Yet it has a wealth of resources and management skills from the hardware marketplace that could be productively applied to providing desktop services.

In the U.S., the traditional systems operations vendors like EDS are having some success in the desktop services market. In Europe, the major contracts are currently being won by the large personal computer dealers such as P&P and members of the International Computer Group, like Raet and Comptacenter. These organizations offer users a breadth and depth of systems and applications software product support capability that other vendors have difficulty matching. In addition, if the user is also seeking a single source of product supply and support, the dealers have a significantly stronger product supply capability.

Indeed, the desktop services market will be a very competitive one, because in addition to the activities of the dealers and outsourcing services vendors, this opportunity will also be targeted by third-party maintenance organizations and equipment manufacturers such as Digital and Unisys.

The emergence of desktop services will lead to significant restructuring within the outsourcing market. The traditional outsourcing vendors with their mainframe and proprietary midrange capabilities need access to the personal computer and open systems capabilities of the dealers. Similarly,

the dealers recognize that many major outsourcing contracts require both desktop and large system capabilities to provide full service to the client. Major desktop services contracts have been awarded separately from any mainframe or midrange contracts. However, there is clearly a major opportunity for vendors that can effectively combine these offerings.

3. Requirements for Success and Resulting Benefits to Clients

Vendor characteristics for success in desktop services are shown in Exhibit V-10. A broad geographic base (large number of local units) is important because users require local installation and support capabilities for distributed units. Strong program management is essential since this is a highly visible business. For that reason also, demonstrated success is vital—users and IS want minimal risk. That also means the vendor must have the resources to invest in geographic and product expansion.

EXHIBIT V-10

Desktop Services Vendor Characteristics

- Broad geographic base
- Good program management resources
- Prior demonstrated success
- Resources to invest in expansion

The benefits of outsourcing desktop services perceived by users are shown in Exhibit V-11.

- A key benefit is that clients gain control over their IS infrastructure. By using a third party, clients avoid some of the "turf" conflicts between IS and users that have plagued the PC world.

- Management of the environment shifts to the vendor who has responsibility for forward planning and control as well as the day-to-day operations of the infrastructure. An important component of this process is the ability of the DTS vendor to

  a) Evaluate the "upstream" flow of products so that DTS plans can be constructed accordingly; choosing the appropriate operating system environment is a good example of the importance of this activity.

EXHIBIT V-11

Benefits of Desktop Services

- Clients regain control over PCs
- Management shifts to vendor
- Expenses are predictable
- Enhancements easier to implement
- Standards are a by-product

b) Test products in a laboratory to determine performance characteristics before distributing to clients; particularly important in this regard is the interaction among products in the client's operating environment.

- Expenses associated with the desktop environment become controlled and predictable. Management processes are installed.

- As a consequence of the logistics management systems and disciplines put in place by the vendors, enhancements become easier to install and implement. Understanding the characteristics of target systems before starting a roll-out, substantially improves the probability of success.

- Standards for applications systems, software, and communications are a by-product of this process. Often this is the only way to ensure they are developed and followed.

Noteworthy by its omission is any reference to cost savings. This is very difficult to measure since there is very little data in organizations on actual costs of DTS. One of the tasks of many DTS vendors is to determine these costs.

4. Desktop Services Conclusions

In conclusion, desktop services is the newest and fastest growing segment in IS outsourcing.

- It has very high growth potential since for the following reasons:

a) There are more opportunities today in the downsized then in the mainframe world

b) Often neither IS units nor user departments want to set up the necessary resources and infrastructure to support the growth in end-user, client/server, downsized operations.

c) The potential for expansion is large since these systems actually operate in the user's environment.

- Downsizing is definitely driving the market and this revolution will continue. The technology trends all support continued dramatic, price-performance improvements in all aspects of desktop products. And the demand by users for control of their IS destiny will increase.

- Many of the technology changes in associated fields will become interfaced with computers at the desktop, not the mainframe, level. Developments in areas such as multimedia, video/ display integration, TV/ display integration, image processing, optical storage, global positioning systems (GPS), cellular communications, natural language interfaces, object-oriented processing are all affecting the desktop and mobile systems. This is a very "high-tech" segment of the industry with rapid and important changes.

Exhibit V-12 summarizes these aspects of the DTS outsourcing market.

EXHIBIT V-12

Desktop Services Conclusions

- Newest phase of outsourcing market
- High growth potential
- Driven by downsizing pressure
- High technology content

The problem and the opportunity is the application of these technologies in effective, economic ways. DTS vendors who can deal with the mainframe, network, and desktop will be well positioned to take advantage of the opportunity.

D

Transition Outsourcing

The changes in the IS unit and its relationship with its parent organization, described in the previous chapters, will cause major restructuring of organizations, systems, and working processes. Essentially, organizations will have to transition from one state to another; they will have to re-engineer themselves—or be re-engineered!

In most cases organizations will not be able to make these transitions by themselves. Just as with many chemical reactions, an outside agent or catalyst will be needed. As depicted in Exhibit V-13, this is the fundamental driver to transition outsourcing opportunities.

We use the terms "transition outsourcing," transition management," etc., rather than equivalent terms such as "change management" because changes can be minor as well as major. There can also be major changes within the same environment, for example, data center consolidation. "Transition" means change that is fundamental, moving from one state or phase to another through a boundary period. To use a physical analogy, cooling and heating water may be regarded as changes; converting it to ice or steam is a transition.

EXHIBIT V-13

Transition Management

- Requires outsourcer as agent of change
- Transition difficult to accomplish
- Transition takes time
- Dual operational environments required

Both users and vendors understand that most organizations are not satisfied with their current systems state; they want to be somewhere else. Andersen Consulting's superb advertisement that had two points on a blank page, A and B, and said "we draw straight lines" addressed this issue very directly (Exhibit V-14A).

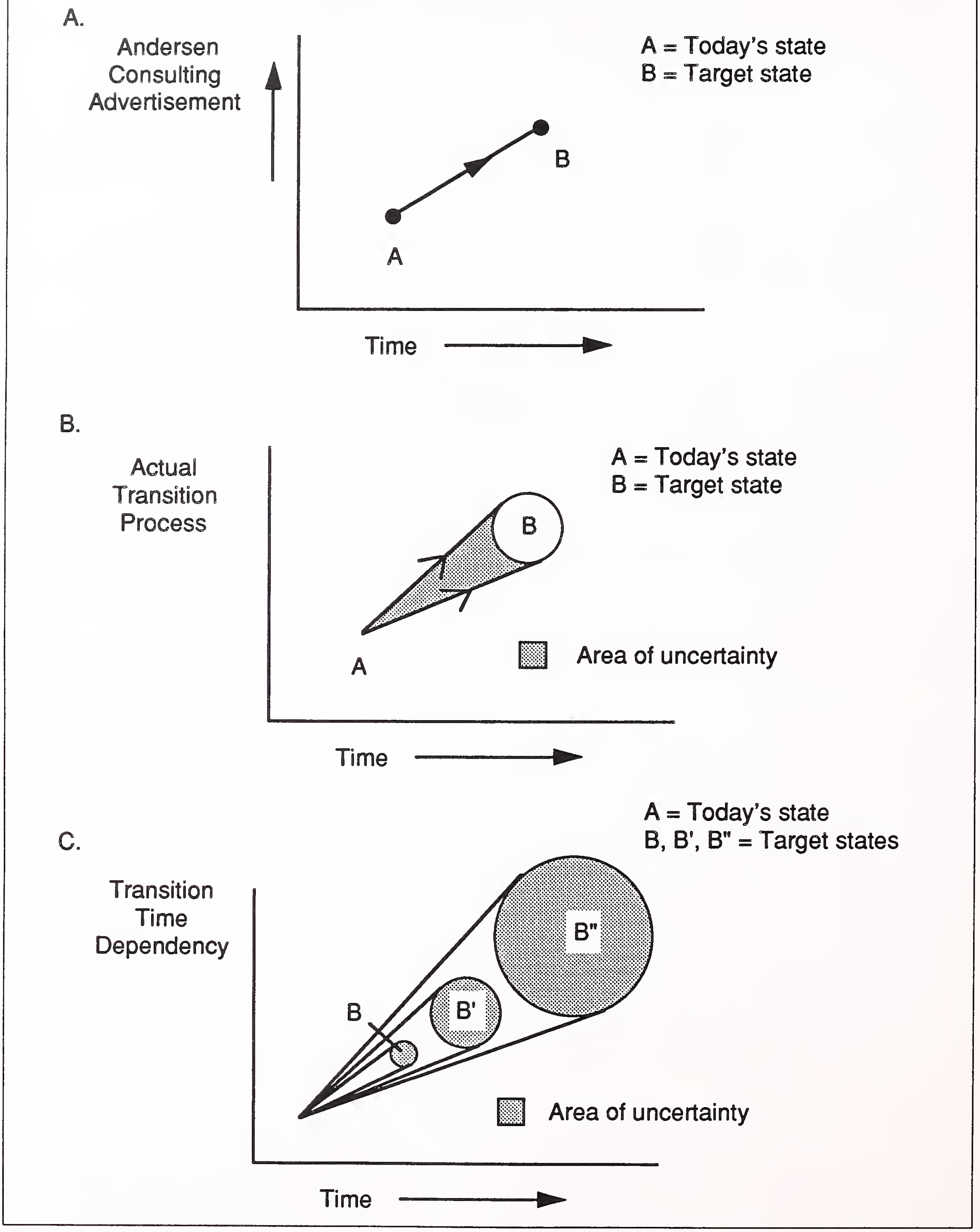
The only problem with the advertisement, is that no one really knows where B is; it is a phase space rather than a point (Exhibit V-14B). It is also moving. As the transition is made, so it must adapt to the change in target point: B is a moving target.

This is just one of the factors that makes transitions difficult to accomplish. And, of course, any alteration in target position increases uncertainty and risk.

This risk increases with the length of time a transition takes (Exhibit V-14C). Therefore it is important to make a transition as rapidly as possible. The more rapid the transition, the fewer variables that can alter significantly, the smaller the changes in these variables, and the less the overall cost.

EXHIBIT V-14

Transition State Variation



In order to accomplish a significant transition effectively and rapidly, dual operating environments are normally required for some time. Again this period should be minimized. As shown in Exhibit V-15, the dual operating environments required today are often very different, not only in IS architecture but also in the nature and ownership of their operation.

EXHIBIT V-15

Transition Outsourcing Environments

- IS architecture transition is from centralized mainframes to downsized client/server
- IS ownership from central IS unit to user organizations

Since any operation today is operating "flat-out" with minimal staff and resources, very few organizations have the resources to provide the additional effort needed to accomplish major transitions themselves. In many cases this results in transitions being deferred.

In other cases, organizations can use external resources of various kinds to help accomplish the task, as shown in Exhibit V-16. Certainly re-engineering systems integration projects are generated by this phenomenon. In these cases the new development is largely done by a vendor. However, this does not address the dual operational environment issue nor the subsequent operation and support of the system. Thus, many organizations will prefer to outsource their existing operations while developing the new environment themselves.

There is an opportunity for transition management itself, whereby a vendor takes responsibility for the whole transition process or consults on it. This can be performed by a company that does not provide the outsourcing or SI services itself but contracts or helps the customer contract for them. It may also be performed by an outsourcing vendor.

EXHIBIT V-16

Transition Opportunities

- Systems integration
- Transition management
- Outsourcing old system
  - Platform operations
  - Applications maintenance
  - Network management
- Outsourcing "new" environment
  - Applications management
  - Applications operations
  - Network management
  - Desktop services

In the most common form of transition outsourcing today the vendor takes over the operations of the current systems, as depicted in Exhibit V-17, while the client develops the new. The client then transitions to the new environment and the old operations are run down or closed.

The types of outsourcing that benefit most immediately from this approach are platform operations, network management, and application maintenance. Platform operations involves taking over the existing mainframe operations and systems and merging them with the vendor's infrastructure. By this means the customer avoids the problem of having to keep the almost full cost of a data center operations until the work is completely unloaded. After all, as long as any applications or organization units are using the mainframe, the whole infrastructure must be maintained. For this reason, this operation becomes increasingly expensive and inefficient without outsourcing .

EXHIBIT V-17

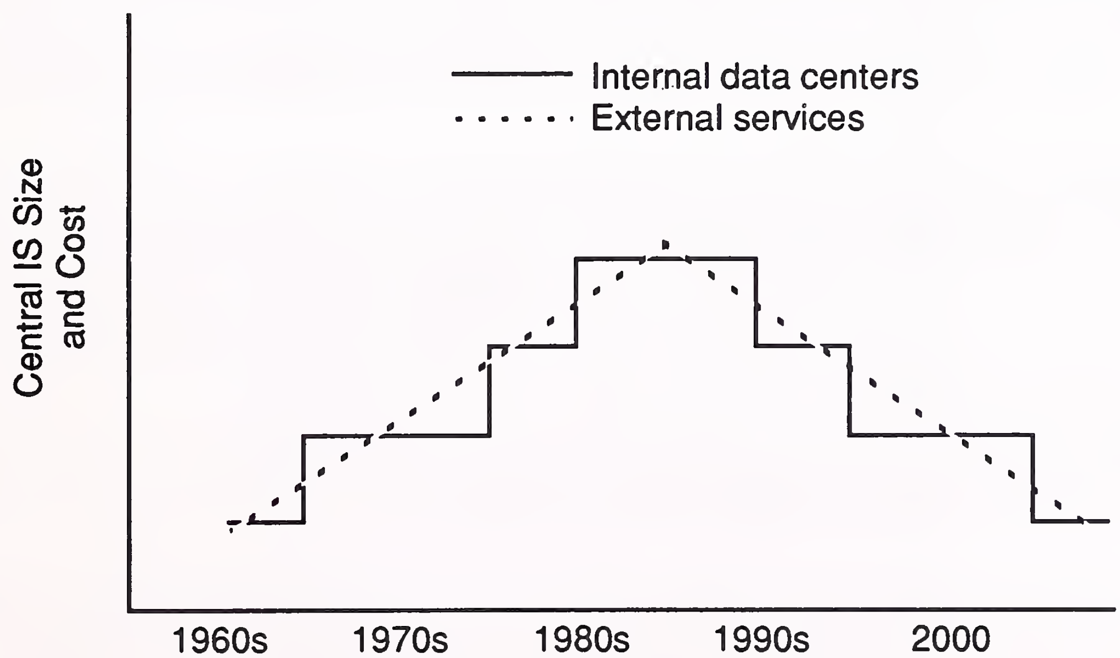
Transition Outsourcing Process

- Vendor manages current systems operations
- Client develops new systems
- Client transitions to new systems
- Phases out outsourcing services

This argument for the use of outside services is exactly the mirror image of that used in the 1960s and 1970s (Exhibit V-18) when data centers were expanding their capacity. Some data centers continue to expand especially when there is consolidation.

EXHIBIT V-18

Transition Platform Systems Operations Rationale



The argument also applies to outsourcing the network. Generally, management of the "old" network will go with the platform operations vendor. However, there will be circumstances where the customer chooses to manage both computer operating environments while outsourcing the old network.

Applications maintenance is a natural result of transition outsourcing where the vendor takes over responsibility for maintenance and enhancement of the existing applications portfolio of an organization. Generally, this will include the transfer of some of the technical staff. The remainder of the customer's technical staff then expends its efforts on the development of the new environment—a much more popular activity with the staff than maintenance.

However, this can only work when the quality and skills of the internal staff are such that they are capable of performing in the new environment. In most cases this will not be true. This lack of internal skill becomes the prime driver behind the outsourcing of the new environment activities. Typically these new activities will be much more applications oriented, starting with SI as mentioned above.

Applications management and applications operations contracts will generally involve both "old" and "new" development and operations functions. There may be unusual cases where the customer will keep all its old staff and systems in place while using the vendor to develop, install, and operate the new systems.

A similar situation will apply to network management; both "old" and "new" networks will be managed by the contractor. The new networks are much more complex, so the transition network outsourcing vendor will have to set up the internal infrastructure to handle this complexity as part of the contract.

In transition desktop services contracts, the main objective of the customer will be to establish the new environment in a controlled manner. Particularly important will be establishing the logistics management system and the user education and training function. However, the probability is that desktop services contracts will be permanent rather than transitional in nature.

Transition outsourcing provides substantial benefits to the customer as shown in Exhibit V-19 modified.

- First of all it shifts the focus of IS to where the organization is going rather than where it has been. The benefits from IS come from substantial change—revolution rather than evolution. The outsourcing vendor(s) is (are) also focused on transition even if their part is operating current systems.

EXHIBIT V-19

Transition Outsourcing—Client Benefits

- Shifts IS focus to new environment
- Shares risk
- Provides additional resources and management control of phase-out
- Shifts onus for closeout to vendor
- Provides basis for long-term relationship

- Transition outsourcing provides the resources necessary to accomplish the change. Since the customer is also moving into a new, and perhaps strange, environment, additional management help is necessary as well as the organizational resources. This is important in order to minimize risk.

- It is all very well for consultants like Hammer to promote the "obliteration of work" through re-engineering, but an organization only gets to do this once—if it fails it probably will be out of business or, at least, severely constrained. Hence risk reduction is a prime target and benefit of transition outsourcing.

- Transition outsourcing provides a controlled phase-out of existing processes and systems. It also provides for graceful people transitions. Those not required in the new environment may well find a new "home" in the outsourcing vendor.

  In many instances the closing out of hardware, software, and people relationships is shifted from the customer to the vendor. This has many advantages. Usually the vendor is in a much stronger negotiating position with other vendors than the user. Relationships can be changed with the vendor playing the role of the "bad guy."

- Transition outsourcing is less threatening to the organization, particularly to IS, than permanent outsourcing. Even if the ultimate objective may be a permanent relationship, transition outsourcing can be a graceful step in that direction that has less trauma attached to it.

- Through this process the buyer can decide if it wants to expand the scope of its relationship with the vendor on a long-term basis.

This, of course, leads to substantial benefits for vendors, as depicted in Exhibit V-20.

EXHIBIT V-20

Transition Outsourcing—Vendor Benefits

- Develop client relationship
- Potential for "add-ons"
- Usually longer than planned
- Permanent outsourcing potential

- Transition outsourcing provides the ability for the vendor to become involved and to develop its client relationships. Since user satisfaction with existing systems is likely to be mediocre to poor, the vendor has the opportunity in such relationships to demonstrate its effectiveness and the ability to improve the situation.

- The potential for "add-ons" of all types is very large. This may include becoming involved with SI projects as the development process proceeds. The probability is that the in-house organization will need more help than it plans if it keeps responsibility for the development process.

- Also, transitions invariably take longer than planned. This provides an excellent opportunity for increased profit and revenues for vendors supporting the old systems. Typically the transition outsourcing contract is priced to make a profit over the course of the contract with initial losses due to conversion activity being made up later on. Hence, contract extensions are operating at the more profitable end of the process.

- The ultimate potential benefit, of course, is the opportunity to become a permanent outsourcing vendor. However, this may be more difficult than it seems because of the difference between the new and old environments. If the vendor does not demonstrate its expertise in the new environment it may find that it is associated too closely with the old environment and may lose to a vendor with a "more advanced" image. This has already happened.

Transition outsourcing, then, will be very important in the 1990s, particularly with regard to the continuing trend to downsizing.

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VI

Outsourcing and Vendor Capabilities

The objective of this chapter is to characterize and categorize vendor strategies. Vendors focusing on outsourcing come from various backgrounds, have a variety of skills and orientations, and therefore fit differing client requirements. The chapter offers

- A framework to categorize the vendors against IS requirements
- A review of the performance of systems integration and systems operations vendors
- A look at how the vendors help IS deal with the internal IS staff relative to an outsourcing decision
- A framework for assessing vendor capabilities in the various categories of outsourcing

Detailed descriptions of individual outsourcing vendors and their capabilities are contained in the U.S. and European *Information Systems Outsourcing Competitive Analysis* reports.

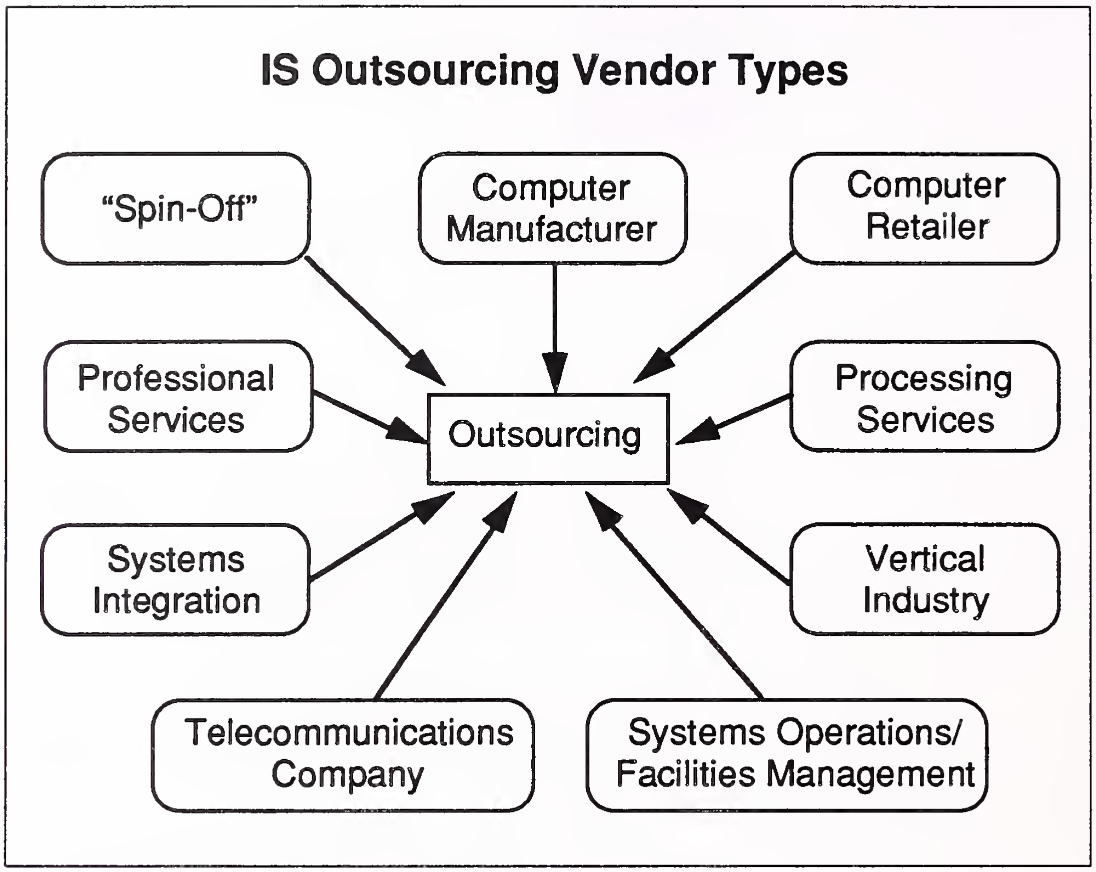
A
Vendor Categorization

The categories of outsourcing outlined in Chapter III provide a framework in which to look at typical vendors and evolving vendor strategies.

Just as systems integration attracted IS vendors from every segment of the industry, so has outsourcing. Hardware vendors expanding services, processing services companies adding application support, and professional services firms adding processing services are all changes currently under way as a result of this trend.

As Exhibit VI-1 depicts, vendors bring different strengths, assets, and backgrounds to meeting the outsourcing requirements of the 1990s. As a result, their strategies differ in significant ways.

EXHIBIT VI-1



- A computer manufacturer may be approaching systems operations defensively to protect its installed base and services revenue stream. It brings a very strong services infrastructure and operating organization, but it is not applications-oriented and tends to be uni-vendor in orientation.

- The professional services or systems integration vendor brings the ability to perform project-oriented assignments, but may not have the proven capabilities to manage complex computer and network operations.

- Vertical industry specialists (e.g., in banking or health care) can often provide the core applications software and processing. Yet they may not have the skills to provide maintenance and support for internally developed software if that is to be part of the outsourcing agreement. They also are most expert at medium-sized contracts.

- Computer retailers and distributors are entering the outsourcing market for desktop services. JWP and Computerland in the U.S. have such contracts. Several European distributors are being much more aggressive, however.

- Today's processing services and systems operations vendors that are not vertical industry specialists either take over and run the client's data center or shut it down and shift to an off-site, multiclient center. These vendors may not want to take advantage of downsizing changes because this will reduce the value of core investments in their large data centers.

- Telecommunications companies understand the network areas extremely well. Several of them, such as Bell Atlantic and Bell South, have extensive support capabilities particularly appropriate to desktop services outsourcing. They tend to be weaker in applications and project management capabilities.

- "Spin-offs" vary widely in scope and capability of service. These companies are formed from in-house IS units. They can give very good prices and services, but usually do not have much else to offer. Care must be taken by the buyer to protect itself against policy changes by the spin-off's parent.

- Traditional systems operations/facilities management companies have broadened their approaches to the IS outsourcing markets. They now offer a portfolio of such services and in several cases, such as EDS and First Data Corp. (American Express), will offer business operations.

It is important to understand the capabilities of a potential outsourcing vendor, and those it is trying to add to expand its service offerings.

B

Outsourcing and Systems Integration Markets

A quick review of INPUT's research into systems integration and outsourcing provide a number of insights on the similarities and differences between these "responsibility" services.

1. Market Forecast

Exhibit VI-2 and VI-3 show the 1992-1997 forecasts for systems integration and outsourcing. Both are strong growth sectors for the information services industry.

These forecasts are based on users' shifting their buying patterns towards the more comprehensive services as described in this report. However, they are "evolutionary" rather than "revolutionary," i.e., they assume steady growth rather than massive, unpredicted shifts. The potential for revolutionary shifts in outsourcing is large. The reason for the potential for very large growth in outsourcing is that it simply represents a "transfer" of current expenditures from an internal "cost" to an external "market."

EXHIBIT VI-2

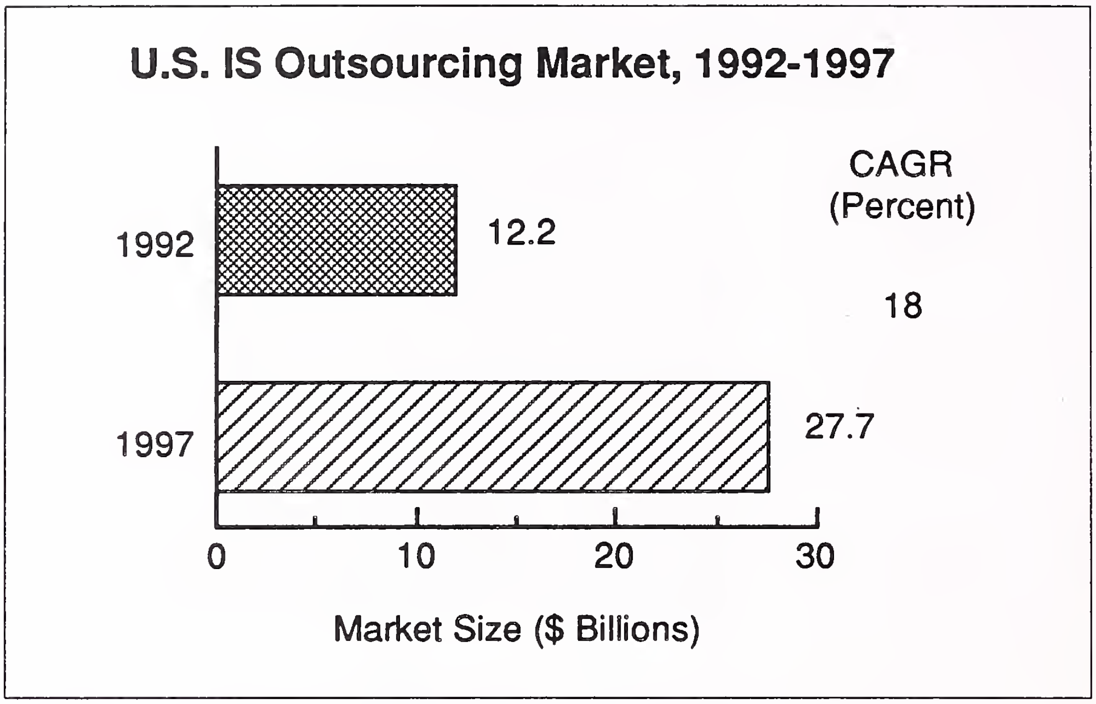
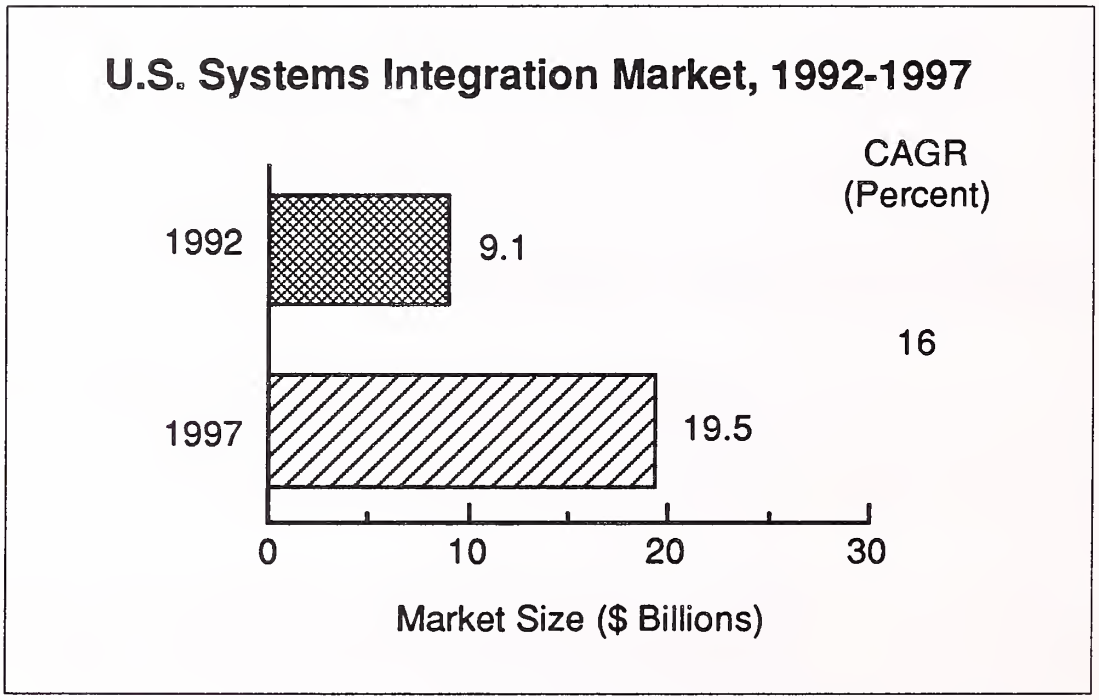


EXHIBIT VI-3



2. Driving Forces

Exhibit VI-4 provides a comparison of the forces and factors leading to the use of these services. In turn, these factors suggest some of the characteristics the vendors must have to serve them.

EXHIBIT VI-4

Driving Forces for Systems Integration and Systems Operations

Category	Systems Integration	Outsourcing
Staff	Scarcity of talents Unique skills	Scarcity of talents
Technology	Unique technology New technology	Increasing complexity New technology
Response	Rapid response	Flexibility of response Disaster recovery
Financial	One-time investment	Investment avoidance Economy of scale

- Both systems integration and systems operations are proving to be a source of staff and talents not available internally to IS.

- In the technology area, these vendors offer quicker access to new technology for the automation of the data center and data network, or for a new complex systems solution to an operating problem.

  - The technologies available today to improve operations are extensive, but expensive, and require expanded implementation skills. The systems operations vendor can afford to acquire and maintain the necessary capabilities, where many internal organizations cannot.

  - The systems integration vendor is proving to be the source of new technology that the internal staff is not equipped to implement.

- The need for responsiveness is being driven by operating management in its struggle to react to business changes. Although subjective, management's reactions provide today's measure of service from the information systems program.

  - Systems integrators offer the ability to meet unexpected requirements without having to expand or divert resources in-house.

- The systems operations vendor offers greater opportunities to respond to unexpected processing requirements, the flexibility to increase or decrease services on demand, and disaster recovery services.

- The financial driving forces are different for systems integration and outsourcing.

  - With system integration, there is a project-oriented investment and cost.

  - With outsourcing, the opportunity exists to postpone major investments, put everything on a pay-as-you-go basis, remove the capital costs from the balance sheet, and gain access to improved economies of scale.

3. Vendor Performance

Research conducted by INPUT in systems integration and systems operations has helped it evaluate the performance of vendors. As shown in Exhibit VI-5, satisfaction in general is quite high.

- The lowest ratings were on costs—but even these were above 3.0 on a scale of 1 to 5. The levels were above the satisfied level, and cost is not the only reason for outsourcing. In many instances cost is a secondary reason.

- The ratings on performance and quality are quite high, exceeding 4 on a scale of 1 to 5.

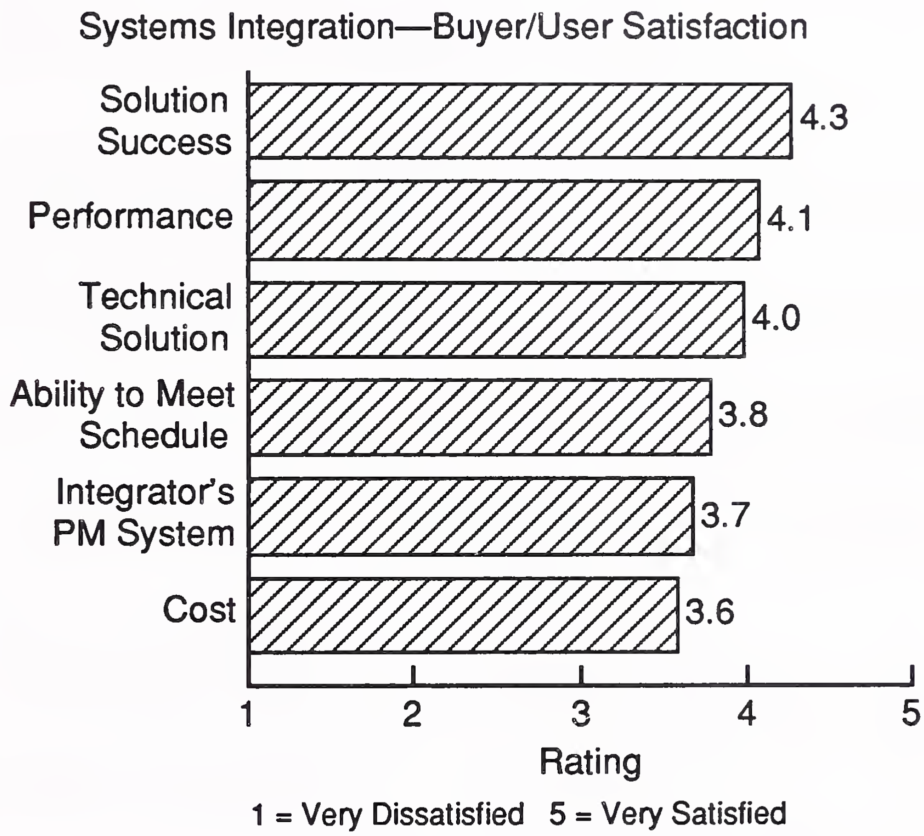
Although no one suggests that performance is perfect, it is achieving more than satisfactory levels and reinforcing the viability of the outsourcing alternative.

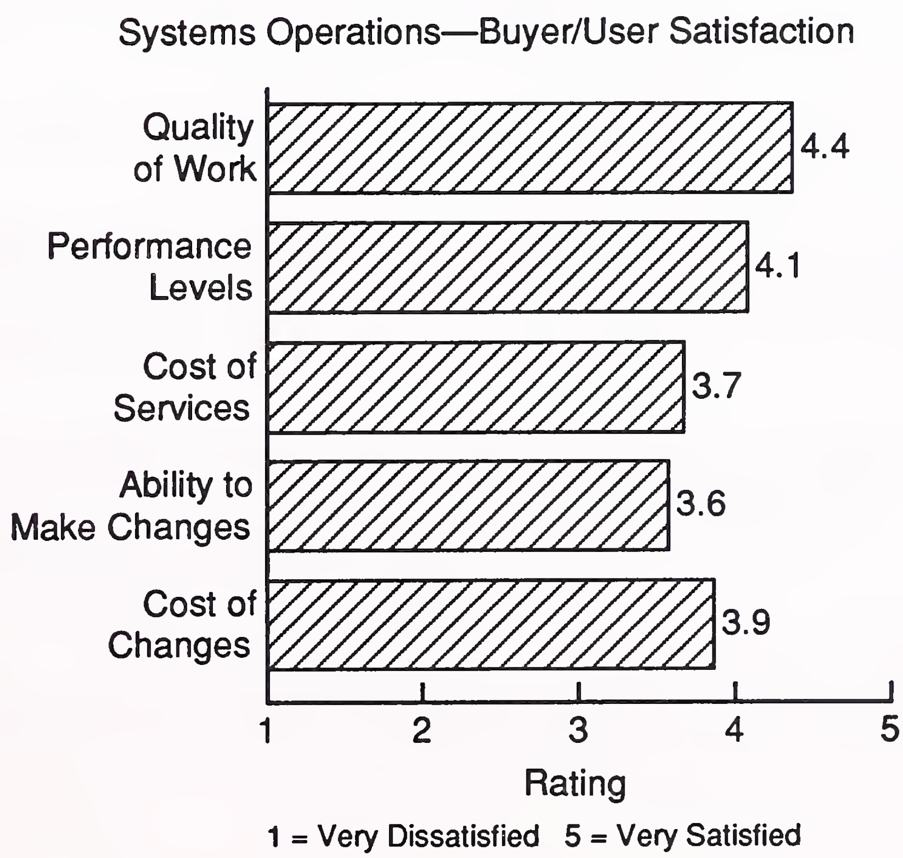
C
Vendor Approaches to IS Staff Issues

One of the strongest deterrents to an IS manager making an outsourcing decision is the impact on the existing IS staff, which was discussed earlier. A team of professionals that knows the current IS investment, and maintains it at any cost, has great trouble accepting that someone else can do it just as well, if not better. However, in today's fast-paced business world of constant restructuring and work force change, resisting for this reason is unacceptable.

EXHIBIT VI-5

User Satisfaction with Vendor Performance





Fortunately, most vendors who are trying to meet application requirements, run a processing utility, maintain applications, and/or operate networks realize how critical this issue can be. They have developed programs to help address this issue, and because of their own business development requirements, are always on the lookout for qualified IS professionals.

Exhibit VI-6 summarizes the key efforts made by outsourcing vendors to address personnel impacts and issues. Although some vendors are more skilled than others, every vendor works to alleviate this problem. Many of the benefits are the same, regardless of the type of outsourcing decision, but some are more important than others in the various categories.

EXHIBIT VI-6

Vendor Approaches to IS Staff in Outsourcing

Outsourcing Category	IS Staff Approaches
Applications Management	Absorb key applications staff Provide expanded career opportunities
Systems Operations	Absorb key technical staff Provide outplacement service
Transition Management	Off-load operational management Provide crisis management
Network Management	Strengthen management process Absorb key technical staff
Desktop Services	Absorb end-user computing/help desk staff Provide end-user training and support

- All vendors will consider hiring the staff of the new client.
  - In some instances this is essential, because the vendor will be operating the client's own data center or, more importantly, will be assuming applications maintenance responsibility.
  - In all cases it is to the vendor's benefit to work with the new client to identify which staff members are critical and need to stay on the client's staff.

- When employment offers are made, the process is generally regarded as well managed.
  - Vendors offer to extend benefits if there are significant differences from their own benefits programs.
  - Vendors typically have comparable or better pay scales.
  - Vendors generally end up providing a better long-term career path for the IS professional.
  - Vendors have not experienced turnover problems with staff that came to them as a result of an outsourcing agreement.
- One firm is always prepared to offer a structured outplacement program.
  - It uses a firm that specializes in IS professionals and has a proven record of helping the new client keep its employees reasonably satisfied.
  - The human resources executive of this systems operations firm has become a key element in its sales cycle. The vendor's human resources department implements the outplacement program for the client.
- Compared to many internal IS functions, the vendor training programs for users and IS professionals are stronger.

D

Vendor Capabilities

Outsourcing is not a panacea or the right move for every organization, but it is an alternative that all organizations must assess in the near term. Vendor capabilities and related issues depend on what type of outsourcing decision is under consideration.

In Exhibit VI-7, the level of importance is evaluated for vendor capabilities in categories of outsourcing. A high importance rating indicates that capability is critical to the success of the outsourcing agreement.

Key vendor capabilities are as follows:

- *Organizational Skills*—Transition management and applications systems operations agreements cause significant upheaval in the internal organization. Progressive vendors provide support in this area to help IS management and internal personnel plan and execute the organizational

changes. The outsourcing vendor may want to hire some of the staff and has its own the reputation to protect as well. The closer the involvement with end-user units, the higher the level of organizational skill required.

EXHIBIT VI-7

Relative Importance of Outsourcing Vendor Capabilities

Outsourcing Category	Capabilities						
	Organ. Skills	Technology		Application		Sys. Mgmt.	Proj. Mgmt.
		Data Ctr.	Other	Gen'l.	Specific		
Applications Management	M	L	M	H	H	H	H
Systems Operations							
a. Platform	M	H	M	L	L	H	L
b. Applications	H	H	M	H	H	H	H
Transition Management	M/H	H	M	L	L	H	H
Network Management	L	M	H	L	L	H	L
Desktop Services	M/H	L	H	L	L	H	L

H = High Importance, M = Medium Importance, L = Low Importance

- *Technology - Data Center*—The data center capabilities required today are far more extensive than in traditional facilities management. Proven capability to shut down a data center and integrate it into a processing utility is required for systems operations. A management control system must exist to assure the contracted performance levels are achieved.

- *Technology - Other*—Other technology issues are important and can be critical to a successful relationship. Telecommunications skills are essential to network management, and skills in client/server and down-sizing are vital to desktop services.

- *Application Knowledge - General*—Broad application knowledge is of great importance only in applications management and systems operations relationships where the entire suite of application systems is to be supported, and will possibly be replaced.

- *Application Knowledge - Specific*—Specific application knowledge is most important to the applications management process, with or without systems operations. It is an ingredient of success and the client should not have to teach the vendor's staff.

- *Systems Management*—As noted previously, it is management skills (systems management) that are being purchased through outsourcing. If IS has to manage the vendor day by day, a key advantage of outsourcing is lost. In an applications management or systems operations agreement, the final test of success will be the vendor's ability to fully manage the operation and provide the service levels specified. In the end, all other issues become secondary.

- *Project Management*—This is a fundamental skill required in any information systems program or project. It is of critical importance to those outsourcing relationships that are objective based: transition management, applications management, and application systems operations.

Vendors are working hard to strengthen their capabilities on a number of fronts. Their business is to manage information systems projects, programs, and operations; and it is through disciplined management that they can provide a valued set of products and services.

E

Management Component of Outsourcing

At a number of points in this report INPUT has noted the changes occurring in the management component of outsourcing offerings. Exhibit VI-8 clarifies the changes.

In traditional offerings from vendors, the management component was modest at the most.

EXHIBIT VI-8

Management Component of Outsourcing Offerings

Management Component	Vendor Offerings
Strategic	Systems management
Tactical	Applications management Transition management
Operational	Applications maintenance Systems operations Network management
Technical Support	Network management Desktop services Systems operations

- In the applications software products, turnkey systems, contract programming, processing services and network services there was little if any IS management provided. Support following the purchase was technical in nature.

- With the growth in professional services from contract programming to actual applications development, a project management component was introduced. It was part of the service purchased by information systems.

- Only in the facilities management area was there any operational management contribution.

In the current offerings of systems integration and outsourcing, the management component becomes more dominant.

- The project management component expanded in size and importance with the emergence of systems integration. By turning to a single vendor, who in turn may subcontract, the information systems unit is transferring the majority of the project management task to the systems integrator. The vendor interface is with a senior IS and/or non-IS manager and is limited to a specific project.

- Today's systems operations agreements provide for significant operational management. The data center and data network are managed by the vendor on a full, day-to-day basis. Management is performed by the customer looking at a wider time horizon and specifically measuring performance levels.

With the newer categories of outsourcing, the management component is again growing.

- In an applications management agreement, the operational management component typically includes a direct, day-to-day interface with the user and a 24-hour interface with the data center. Internal IS management steps back to a measurement and planning role.

- For applications management and transition management, the management relationship reaches the tactical level. The vendor is directly involved and impacts the entire information systems program. The management component goes beyond day-to-day to short-term plans and decisions. The vendor interface now spans most or all levels of internal IS management and has many of the elements required to form a partnership.

- In systems management contracts, partnership is achieved. The vendor is involved in all levels of the information systems program and is providing a strategic, tactical, and operational management component.

- Beyond this, in business operations outsourcing, the partnership is expanded to include non-IS functions or processes.

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VII

Outsourcing—Decision and Implementation

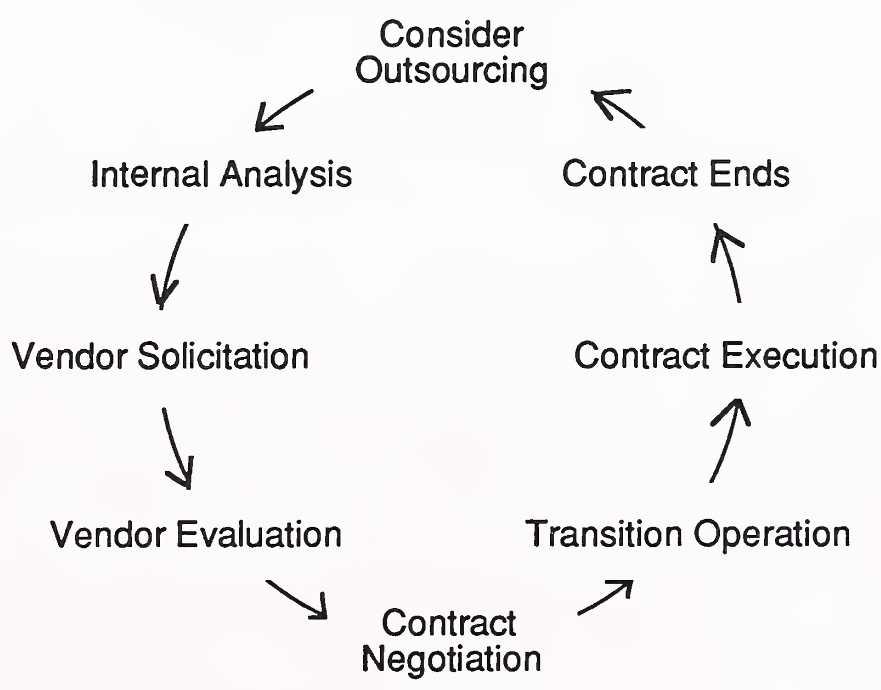
This chapter addresses the outsourcing decision process and the factors impacting outsourcing decisions and vendor selection; it presents ideas for managing the vendor and discusses organizational impacts. It discusses "insourcing." The last section provides a framework for assessing benefits from outsourcing.

A
Outsourcing Decision Process

Exhibit VII-1 depicts the outsourcing life cycle. Included below are relevant results from a recent survey of 21 major outsourcing contracts.

EXHIBIT VII-1

Outsourcing Decision Process



The process starts with consideration of outsourcing, often initiated by a top executive or board member.

- If the internal analysis is done by the IS unit then there is almost never a substantial outsourcing result. In addition, there are consultants whose disguised objective in the "internal analysis" phase is to develop follow-on contracts to improve internal IS operations—"bring them up to external vendor standards." When such consultants are involved, vendors should refuse to bid.

- During this phase, the organization will evaluate what segments of its IS operations should be considered for outsourcing. As shown in Exhibit VII-2, companies that have outsourced are not just including data center operations, the traditional computer facilities management.

EXHIBIT VII-2

Outsourced Functions in Existing Contracts

Function	Number of Resp.	
	Yes	No
Data Center Operations	20	1
Network Operations	10	11
Applications Management	10	11
Applications Maintenance	1	20
Desktop Services	7	14

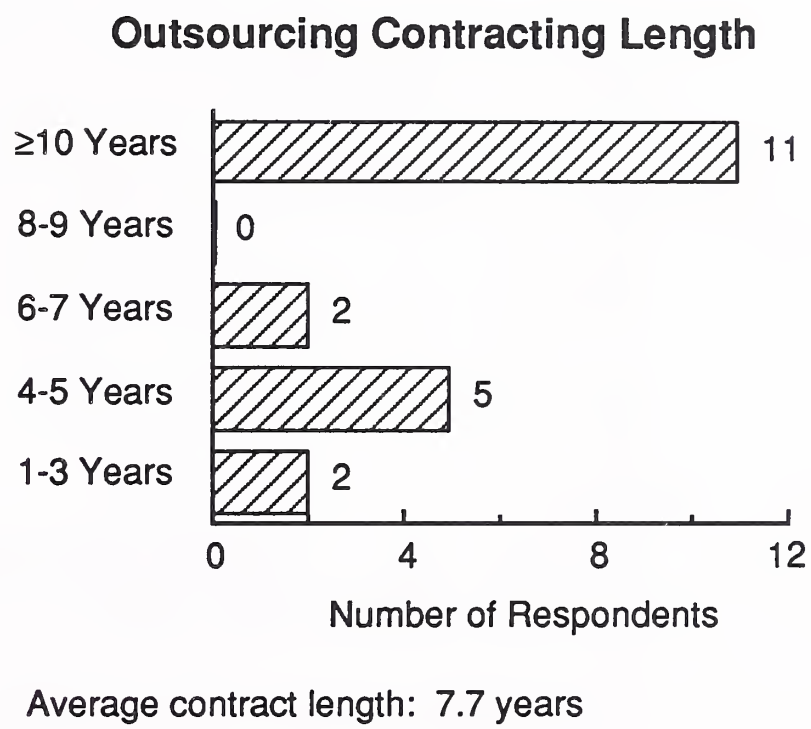
- Vendor solicitation and evaluation usually lead to negotiations with one or more vendors—but INPUT recommends selecting no more than three. Selected vendors must fit in culturally, technically, and business-wise with the client. Initial flexibility in discussions will solidify the nature of the IS components to be outsourced separately or together.

- The vendor/contract negotiation phase is discussed later in this chapter.

- The transition phase should be kept as short as possible (usually less than three months) because of the people and process issues—this requires intense, early, and effective planning.

- A key consideration in the contract negotiation phase must be the length of contracts to be awarded. As shown in Exhibit VII-3, there is quite a variation in length of contract; shorter ones tend to be transitional in nature. As discussed elsewhere in this report, the average length of contract is decreasing because of the increased difficulty in predicting contract conditions and the increasing frequency of transition management contracts.

EXHIBIT VII-3



- Another consideration of course is price: not just the actual amount but the method of calculation and its variation with time. As shown in Exhibit VII-4, pricing methods vary. Although this chart shows resource-based pricing to dominate in this sample, it is becoming less popular, primarily because both clients and vendors are concerned by the potential major impacts of new technology and IS architectures. Thus result-oriented pricing is becoming more popular.

- At the end of the contract period, clients have the option of bringing the process in-house. As shown in Exhibit VII-5, most current users don't know what they will do simply because they are 1 or 2 years into a 10-year contract! Those in this sample that plan to bring the function back in-house are all companies that planned to do so using short, transitional contracts. No long-term clients planned to do so.

EXHIBIT VII-4

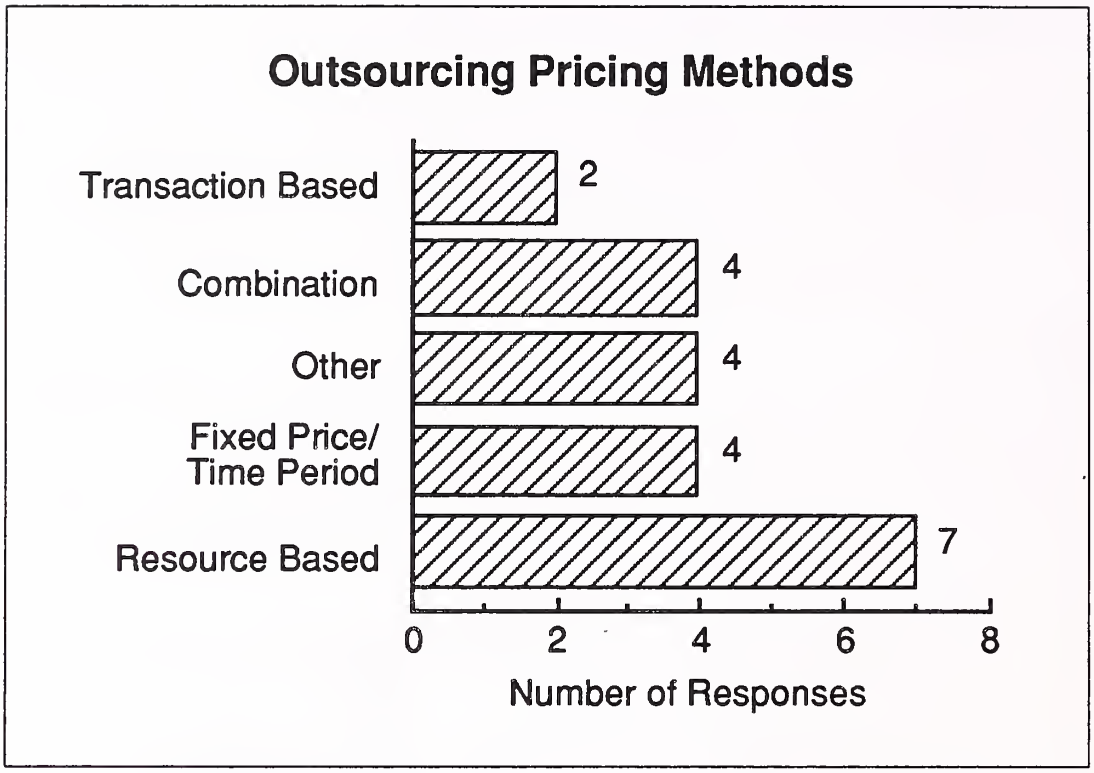
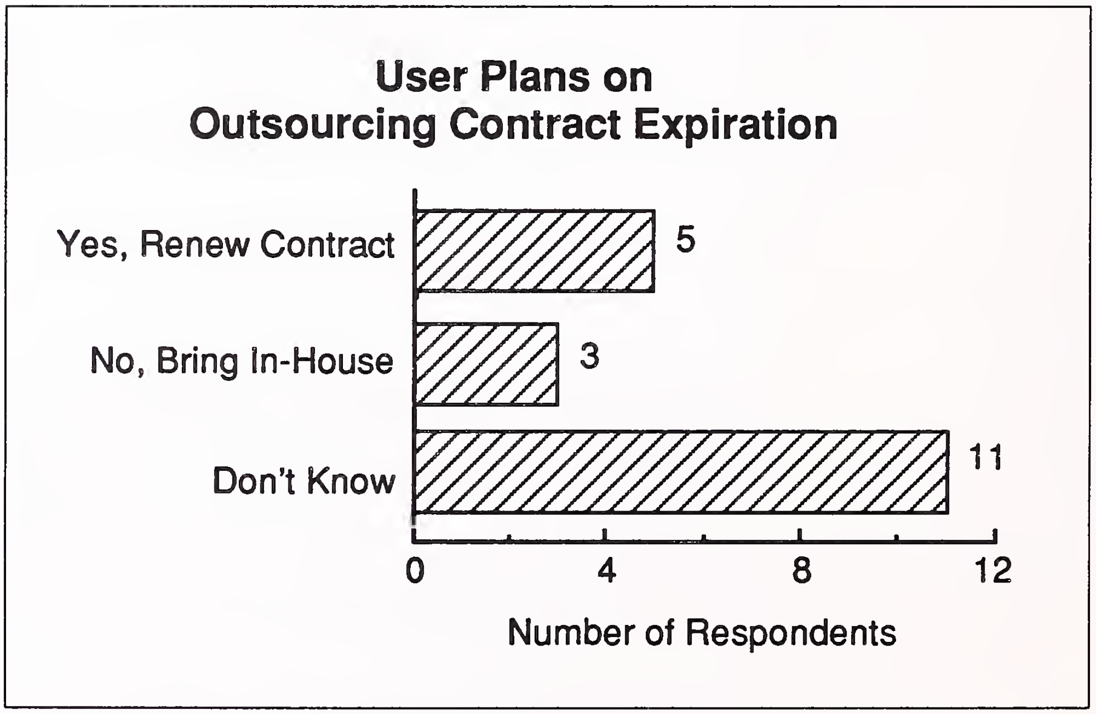


EXHIBIT VII-5



B

Outsourcing Decision Factors

A variety of factors are driving a greater number of organizations to consider IS outsourcing. Exhibit VII-6 provides two perspectives on outsourcing decision factors: that of the organization or business and that of the information systems function.

EXHIBIT VII-6

Business and IS Outsourcing Considerations

Business Executives	IS Executives
Cost (Business)	Cost (IS)
Merger/Acquisition	Control
Restructuring	Personnel
New Directions	Motivation
Focus/Time	Compatibility
Response Time	Response Time
Quality Sooner	Quality

1. Business Executives' Perspective

Many of the major outsourcing decisions that have been chronicled in the industry press and those identified by INPUT can be tracked directly to a major shift in the direction of business. Mergers, acquisitions, LBOs, and restructuring all lead senior management to ask for quick, responsive, and cost-effective IS organizations. When senior management participates in the outsourcing decision, the process becomes very business driven, as indicated by the factors listed in the left-hand column of Exhibit VII-6.

- A number of the organizations considering outsourcing are looking for ways to lower investments and costs immediately after an LBO or divestiture.

- One of the companies interviewed turned to a systems operations company to support its merger and acquisitions strategy. The IS executive knew there was no way his IS strategy could be supported internally on a cost-effective basis. The response time required to absorb acquired companies and "spin off" divestitures could only be accomplished with the capabilities and flexibility provided by a systems operations vendor.

- A principal element in the growing use of outsourcing is simply response time. Today's complex systems take significant blocks of development resources that are best outsourced—especially when they also require technical skills not present in adequate quantity within the current IS staff. Operating management increasingly knows what it wants and when it is needed; the decision to outsource is then a result of business needs, not the personal or technical preferences of IS experts.

2. Information Systems Managers' Perspective

When the outsourcing decision falls to IS management, it can become entangled in the internal pride and history of a support organization that is increasingly in the limelight. The result is that most IS management still typically looks at outsourcing negatively, at least initially. IS managers believe

- Outsourcing will lead to a loss of direct control, create new management challenges, and further, represents the growing involvement of operating management in the operation of IS. (Interestingly, the last two are something IS management has sought in prior years.)

- Outsourcing often results in organizational upheaval and consequent personnel issues. IS management continues to prefer to deal with the technical, not the personnel, issues. An IS manager may not realize that once the outsourcing agreement is implemented, the people management challenge of the job may diminish.

- Outsourcing entails long-term commitments at a time when management is asking for increased flexibility and speed of response. It's not apparent to IS managers that the vendor can be more flexible and responsive than the internal IS organization.

The management challenge for IS is to transcend this list and to adopt a set of factors that more directly parallels that of the organization as a whole.

For example, a recent decision by a major manufacturing firm to outsource its data center resulted from a need to build a new center at a time of significant capital demands by the business.

- The data center had to move and be upgraded. The CIO realized that the capital required would be taken from more critical business programs. He introduced the outsourcing concept, then spent a year developing the alternative and selling it to senior management.

- This CIO transcended the issues of control and internal pride and provided the organization with more capability and flexibility while avoiding a major investment. In addition, the community gained because the outsourcing vendor agreed to install a regional data center in the city.

C

Client-Vendor Relationship

1. Type of Outsourcing Relationship

As discussed previously, there are some important differences in the various categories of outsourcing. These are contrasted in Exhibit VII-7 on the basis of the types of relationships that are established and the differences in the characteristics of those relationships.

EXHIBIT VII-7

Outsourcing Relationship Classification

Relationship Type	Outsourcing Category	Relationship Characteristics
Partnership-Based	Applications Management Systems Operations Network Management Desktop Services	Management-oriented Broad scope Open-ended timing Broad expertise Personnel transfer Flexible agreement Service levels
Objective-Based	Transition Management Applications Maintenance (Systems Integration)	Project-oriented Specific scope Specific timing Specific expertise Focused agreement Target dates

The stated objective of today's outsourcing vendor is a partnership with its clients, yet the result of many major outsourcing decisions remains an *objective-based* relationship that is tied to fairly specific but complex goals.

- Systems operations, applications management, network management, and desktop services can be classified as having a true partnership as an underlying goal.
  - Although it is services that are being sourced, it is the management process along with a broad basis of expertise that is most critical to success. The customer becomes dependent on the vendor for day-to-day, minute-to-minute support.
  - The relationship scope is broad and nonspecific and deals with a large set of individual services.
  - The timing is designed to be open ended and starts with a long-term commitment.
  - There are significant, lasting organizational impacts.
  - The business structure must be flexible and allow the client to change its business and the vendor to suggest changes that are of mutual benefit.
  - Performance is based on service-level measurements not specific point-in-time accomplishments.
  - The cost structure needs to be predictable. Predictability usually means a fixed base level of cost plus predefined incremental costs and penalties for changes in service requirements.
- Applications maintenance, transition management, and systems integration decisions are generally based on a set of specific objectives. While they also tend to be single-source decisions, the breadth of the decision and the various delineating elements are more specific.
  - The primary goal tends to be project oriented; timing and scope are tied to specific goals.
  - The expertise required by the vendor is specific and often not available within the client's staff.
  - The business relationship is focused on the specific goals, and performance measurement is tied to specific dates and costs.

The objective-based relationships can certainly lead to partnership-based relationships.

- An applications maintenance relationship, if successful, will extend over a long time and can expand to cover a complete set of applications and even new development.

- A systems integration relationship can become, or include from the beginning, systems operations requirements.

When the change occurs, it is critical that the client and vendor recognize the differences in characteristics of the changed relationship. The result will probably mean a redefinition of the business relationship.

It is essential that IS management define the expected outsourcing relationship from the start and understand the key characteristics desired for the relationship. Otherwise the vendor may define it, or worse, both parties may get it wrong.

2. Systems Operations Experience

Exhibit VII-8 ranks a number of criteria used by a group of IS organizations that have made outsourcing decisions and are using a systems operations vendor.

EXHIBIT VII-8

Systems Operations
Original Decision Factors

Ranking	Criteria
1	Better/more flexible service
2	Availability of internal operating skills
3	Lower operating expenses
4	Faster application changes
5	Data security/privacy
6	Faster application development
7	Response to personnel changes
8	Reduced capital investment
9	Mission-critical applications
10	Labor relations/unions
12	Executive energy and time
13	Operation on a dedicated system

D
Vendor Selection

Having made a decision to seriously consider outsourcing, the next step is the vendor selection process.

The components of the outsourcing requirement are the initial set of criteria for vendor assessment. Exhibit VII-9 provides a sample list of the standard components of most systems outsourcing decisions.

EXHIBIT VII-9

Components of an Outsourcing Decision

- Tangible components
  - Hardware
  - Software
    - Systems
    - Applications
  - Personnel
  - Telecommunications
  - Facilities
- Process components
  - Security/disaster recovery
  - Planning
  - Change management
  - Control
  - Communications/reporting
  - Organizations/location
- Financial components
  - Specified costs
  - Unspecified costs
  - Capital acquisitions/transfers
  - Lease transfer
  - Price/inflation changes
- Management components
  - Conversion plans
  - Exit/contingency plan
- Cultural components

- Taking the time to create an initial requirements specification for each of these standard components, as well as any unique components, will provide a foundation for understanding and comparison.

- The same requirements specification provides the basis for a true evaluation of whether to continue to insource the portion of IS activity under study.

- The requirements specification will also identify the critical elements and type of vendor relationship required should outsourcing result.

Exhibit VII-10 ranks the criteria used to evaluate vendors.

EXHIBIT VII-10

Systems Operations Vendor Evaluation Criteria

Ranking	Criteria
1	Vendor Systems Operations experience
2	Overall cost
3	Data security and protection
4	If SI contract, SO by prime contractor
5	Vendor provided hardware and software maintenance
6	Application software repair
7	Application software improvements
8	Reduced capital investment
9	Cash flow improvements
10	SO performed in client's facility
11	Labor relations/unions
12	SO performed at vendor location

- Not surprisingly, prior experience in systems operations and overall cost received the highest ranking. The experience criteria include proven management capability.

- The least important criterion was where the systems operations was to be performed. Once you decide to have someone else operate the processing utility, it doesn't really matter where it is located. The key measurement becomes service level, not location.

- The linking of systems integration and systems operations, as indicated by the fourth-ranked evaluation criterion, is further validation of the linking of these services by the customer.

Exhibit VII-11 depicts similar results concerning the selection of systems integration vendors. Four of the first five criteria map directly to the objective-based relationship that is the basis for systems integration.

EXHIBIT VII-11

**Systems Integration
Vendor Selection Criteria**

Ranking	Criteria
1	Industry experience
2	Application knowledge
3	Cost/performance
4	SI experience
5	Project management skills
6	Support skills
7	Service orientation
8	On-site visits
9	References
10	Alliances

- Without the combination of industry, application-specific, and project-oriented experience required for success, there is little reason to keep the vendor on the list.

- The second tier of criteria tends to deal with either the ability to counter potential weaknesses through alliances, or verification that the vendor has performed efforts of similar complexity.

E
Managing the Vendor

1. Information Systems Management Responsibilities

When the decision has been made and the vendor selected, just what role must IS management play? Although some vendors might imply they should "walk away and leave them the keys," those with experience know that does not work because it eliminates a key element necessary to the partnership.

- IS management serves as the buffer, the policeman, and the controller of the relationship.
- IS must do all the things a purchasing agent does to manage the relationship with a principal supplier of components to a manufacturing plant. Just-in-time management applies in systems outsourcing as well.
- Information systems management provides the primary management between the partner managing the outsourced services and the business organization, a relationship that is very similar to that which IS has with current, major internal users such as business units or divisions.

2. Outsourcing Steering Committee

Remember the information systems steering committee, the often-suggested, seldom-effective means to draw senior management into the information systems planning and decision process? Such a structure is proving to be an ideal approach to managing an outsourcing relationship. Exhibit VII-12 provides a framework for an outsourcing steering committee.

- The benefits accrue to both the client and vendor. The relationship needs a forum for structured interchange and planning that is separate from the day-to-day operational interface.
- The primary interface must be with an account manager from the vendor. That person may be responsible for the day-to-day as well as the overall relationship. By using a steering committee, the account manager and the internal IS manager have an infrastructure that permits them to back away and look at the relationship with a broader perspective. Without the steering committee, the broader perspective is not easily developed.

EXHIBIT VII-12

Outsourcing Steering Committee

- Establish direction and priorities
- Approve major projects
- Review performance
- Allocate resources

- The steering committee provides a structure to draw operating management into the relationship with the outsourcing vendor on a routine or as-needed basis, while keeping operating management separate from the daily interface.

- When there is a need to make a change in the relationship, which is inevitable, the forum exists for client management to present that need.

3. Contracting Issues

Constructing an agreement for a broad set of services can be complicated and time consuming. There are simply too many possibilities and unexpected events to be able to anticipate them all in the agreement.

From discussions with IS managers who have negotiated outsourcing agreements, INPUT has concluded that the success of the contractual process is directly tied to the quality of the work that has preceded this phase.

- If the decision is well thought out, and the services to be outsourced defined and understood, the contractual element can become a reasonably straightforward event.

- Research on both systems integration and systems operations contracting efforts has confirmed that the process can be efficient and nondisruptive. While these agreements may be vastly different from those previously negotiated by IS managers, such agreements can be created with reasonable effort and without significant apprehension.

Exhibit VII-13 lists the key issues that need to be addressed prior to starting the actual negotiating process.

EXHIBIT VII-13

Outsourcing Contracting Issues

- Clarity of business objectives
- Establishment of performance measurements
- Action relative to client employees
- Vendor personnel assignments
- Description of working relationships
- Application software rights
- Architectural definition and control
- Basis for flexibility

- If the business objectives are clear and the performance measurements defined, the majority of the monitoring controls will already exist.

- If the action relative to existing client personnel and the key vendor assignments is defined, then personnel surprises will be prevented. The one repeated complaint from clients is that the vendor changes the account manager at the wrong time, just when he/she is doing a good job.

- If the working relationship for operations and planning is described, then both parties will know how issues will be worked out. If there is to be a steering committee (INPUT recommends one), then specify the participants and obligations in the agreement.

- If applications software is involved, either owned by the vendor or developed by the vendor, the agreement must specify ownership and rights beyond the term of the initial agreement. It is the applications software, not the processing capability, that has significant long-term value.

    - If the applications software is vendor owned, does the customer retain the right to keep it if they insource or change vendors in the future?

- If developed by the vendor for the client, what rights does each party have?

- If developed by the client, but enhanced and maintained by the vendor, what rights does each party have?

• The smart vendor will agree that the final control on the use of information technology must remain with the client. The definition of the architecture is essential to success today, whether outsourcing is used or not. If you decide to use the outsourcing alternative, you must create and maintain an IT architecture to assure clarity of overall direction to both parties.

• Most importantly, think about and define in simple terms the type of flexibility required to meet the longer term business objectives of the organization.

The contractual process really starts before the vendor selection process when the outsourcing specification is created. Exhibit VII-14 defines four phases of the contracting process. Viewed in this way, the process is not a single step, and negotiations are just one step in the process versus an activity in and of itself.

EXHIBIT VII-14

Outsourcing Contracting Process

Phase	Objectives
Investigation	Clarity of business objectives Initial vendor elimination
Relationship Definition	Define it without the lawyers Emphasis on service and flexibility Business versus contractual Include IS responsibilities Define transition responsibilities
Contract Negotiation	Keep it short Provide mutual incentives Clarity about people issues
Contract Monitoring	Ability to adjust plan, not contract Control by a steering committee

- One of the first requests to a vendor receiving serious consideration should be for a sample contract. All vendors have them and, even though you may want to use your own contract, it will provide insight into how each vendor defines its client relationships.

- As noted above, the key to a successful contract is a clear definition of the desired business relationship. If it exists, the contract will reinforce it, not complicate it.

- If the relationship is to resemble a partnership, then there must be mutual incentives. Build incentives into the contract and make them simple to measure.

- In the long run, a key element of the agreement will be how it deals with changes in requirements. Nothing is constant, yet a common goal is a fixed-price, easy-to-understand business relationship. Create a framework to absorb change without disrupting the basic agreement. Doing so will provide a true test of how interested the vendor is in a long-term relationship.

F
Insourcing

Certainly any organization that makes an outsourcing decision must consider the potential need to insource at a future date.

- An applications outsourcing agreement will mean the deterioration of internal knowledge about a set of applications.

- A systems operations or network relationship means elimination of extensive technical knowledge and systems and personnel capabilities.

Only a transition outsourcing effort has limited long-term exposures. If the outsourcing vendor assumes responsibility to operate the existing environment while a new technology and application set is implemented, then the old skills do not have to be maintained while the new ones are being developed.

1. Vendor Perspective

Vendors indicate that the insourcing issue, while always present, is not a critical factor.

- Vendors offer protection to their clients with commitments to help insource, licenses to software proprietary to the vendor, and help in training new staff.

- All vendors say they have not experienced significant decisions to insource at the end of agreements and that they believe this success record will continue as the outsourcing concept becomes institutionalized.
  - Once the IS executive and organization as a whole can concentrate on futures, they are not interested in returning to the distractions of operations and maintenance.
  - More common is the expansion, or major modification, of the outsourcing relationship midway through, or at the end of, the initial term of the agreement.
- Systems operations and applications management vendors report very few losses to other vendors at the end of the agreement.
  - This is an indication that strong balanced relationships are being developed between vendor and client.
  - Perhaps movement among vendors will develop as outsourcing and competition among vendors grows. But if there are five years of reasonable success between a vendor and client, there will have to be significant incentives to change.

2. IS Managers' Perspective

IS managers tend to downplay the issue. Having made and implemented their outsourcing decision, the idea of insourcing was years into the future.

- More than one IS executive has been heard to say, "I do not want to ever run a data center again."
- Others commented that in five years the central data center will be even more of a processing utility. They cannot conceive of strategic reasons to insource.

Decisions to insource major applications management and systems operations agreements on expiration will be driven by one or other of the following:

- A significant and unexpected shift in the cost equation in favor of insourcing
- A decision to shift the underlying information technology
- A monumental failure on the part of the vendor

G
IS Outsourcing Benefits

If IS is to look at outsourcing in a balanced manner, it needs to recognize the specific benefits that will result. Exhibit VII-15 summarizes the key potential benefits against the most common outsourcing categories as defined in Chapter III. Although this table is an oversimplification, it provides a framework for IS management to consider outsourcing on a balanced basis.

EXHIBIT VII-15

Outsourcing Benefits

Outsourcing Category	Benefits						
	Costs		Skills Access	Rapid Response	Application Staff		Manage-ment Time
	Oper'n.	Cap'l.			Vendor	Client	
Applications Systems Operations	X	X	X	X	X		X
Platform Systems Operations	X	X	X	X		X	X
Desktop Services	X	X	X	X	X	X	X
Network Management	X		X	X		X	X
Applications Management	X		X	X	X		X
Applications Maintenance	X		X	X	X	X	X

- Cost benefits can be of two types: operational and capital.
  - Vendors have a proven ability to lower operating costs. In many cases the savings reach 20% or more, over many years.

- With systems operations (and potentially, desktop services), the capital costs transfer from the client to the vendor. The ability to transfer capital needs to another company can be of great benefit and can permit the capital so gained to be applied to core business functions. Additionally, many outsourcing systems operations contracts include the purchase of computers and facilities by the vendor, generating cash and capital.

• The ability to access skills not available internally, and thereby respond much more quickly, is a benefit gained from all categories of outsourcing. With access to the larger pool of vendor resources, more rapid response to unplanned needs can be obtained.

• Making the best use of the application skills of the vendor and the internal IS staff is important.

  - In applications management and applications SO, the vendor absorbs the client's applications staff.

  - With applications maintenance, the internal skills needed to achieve development of the new are no longer diverted by the never-ending maintenance of the old.

  - In a transition management situation, IS can focus its internal staff on the strategic goal, moving to the new systems, while the vendor operates the old.

• Furthermore, IS can gain by reducing the day-to-day management efforts in one or more areas (e.g., data center operations) and applying them to more strategically important areas (e.g., planning a future IT architecture).

VIII

Example of Outsourcing Contracting Process

INPUT recently assisted one company in its IS outsourcing process. It provides a good example of the reasons why companies outsource and also the problems encountered.

The company is a major nationwide services provider which was considering outsourcing the majority of its IS activities. At the time INPUT became involved, proposals had been received from two vendors for provision of these services and a comprehensive plan had been received from the internal IS function for comparative purposes. A "Big 6" accounting company had been retained to assist in providing information to the prospective outsourcing vendors, to assist in analyzing the proposals, and to assist in developing the contract.

INPUT was retained to review the process by which the proposals were obtained, to review proposals and contracts for completeness and consistency with industry practice, and to provide recommendations for improvement.

A
Motivation for Outsourcing

The company developed an interest in outsourcing for the following reasons:

- It was dissatisfied with the performance of its application development activities. Projects were slow to be completed, were developed at an excessive cost, were more complex and detailed than required, and were not well disciplined. Further, application maintenance backlogs were excessive and were impacting the performance of the corporation. These opinions were widely held throughout the enterprise. It was considered that having these services provided by an outside organization, even at increased cost, would result in more sensitivity to cost and more emphasis on what was needed—not what would be nice to have.

- The mainframe computer system was running at full capacity and an upgrade was contemplated. Entering an outsourcing arrangement would obviate the need for a processor upgrade.
- The company wanted to relocate the IS function: outsourcing would significantly simplify moving and would greatly reduce corresponding risk.
- Outsourcing would convert much of the IS expense from "fixed" to "variable." That is, the company would have the capability to increase or decrease expense based on its need. This capability would motivate the organization to spend resources wisely and use what was needed.
- "It is hoped, and believed, that outsourcing of the MIS function will result in overall cost reduction." Obviously, therefore, cost was not the prime motivator.

B

INPUT Observations on the IS Outsourcing Rationale

1. Mainframe Operations

There was little concern over outsourcing the mainframe operations and systems programming.

- These activities were not viewed as strategic, were mature, and should be subject to economies of scale.
- The physical location of these service activities was of little consequence and outsourcing would materially simplify relocation.

The head of the IS function did express concern and disagreement with respect to outsourcing responsibility for the distributed applications (System 36 and AS/400). The feeling was that

- These activities are strategic to the enterprise
- The prospective outsourcing vendors had little to offer in this area with respect to applications
- There was no economy of scale and the benefits all accrued to the outsourcing vendor

INPUT countered that these views do not take into account some of the potential benefits of working with an outsourcing vendor:

- The opportunity to apply advanced development technologies currently utilized by most outsourcing vendors
- The potential availability of superior business analysis techniques and methodologies
- Enhanced sensitivity to cost

2. Applications Development

With respect to the application development issue, INPUT saw several problems with the current environment.

- The IS unit was highly centralized and was not as in touch with the business as it should be.
- There was no charge-back system nor a consistent cost/benefit analysis on projects.
- User departments did not appear to take responsibility for systems cost and competed for shares of the development activity.
- Tools, methodologies, and techniques used for development were below industry standards.

Outsourcing to an applications systems operations firm with significant and relevant applications development skills is a means of solving these problems. It should provide immediate benefits and is the easiest solution to implement.

C
Chronology

Interest in outsourcing evolved from discussions between the finance department and a major vendor involving possible development of a new general ledger package. The need to go outside for this package arose from the belief that the internal IS department was too busy to implement a new system. As a result of the discussions, the vendor submitted an outsourcing proposal.

The company had discussions with three other major outsourcing vendors and requested a proposal from one of them. This proposal was received some two months after the initial proposal from the first vendor.

A "Big 6" accounting company was engaged to assist in determining outsourcing requirements, evaluating proposals, and developing a contract. After analysis of the initial proposals, identical letters were sent to the two vendors requesting modification of their proposals to provide the specific services received. One vendor responded virtually immediately and then submitted an unsolicited additional modification two months later. The second vendor's response was also virtually immediate; after requests for clarification it submitted a further response one month later.

The internal IS department was requested to prepare seven-year cost projections to encompass the same services requested of the outsourcing vendors. This permitted a comparison of the external versus internal solutions. A projection was received several weeks after the vendor submissions, and a revised projection one month later.

INPUT was engaged shortly thereafter to sort out the situation and completed a preliminary analysis in two weeks. The preliminary analysis identified significant discrepancies between the proposals. Additional discussions then took place on specific points with each of the vendors in order to provide more refined data for the final analysis.

Both INPUT and company personnel discussed the key issues with the vendors, obtained clarification on some points, and negotiated changes. The company then entered into final negotiations with the recommended and selected vendor.

D
INPUT Observations on the Process

The process used was a reasonable one. Initially giving vendors the freedom to identify those areas that they wish to support is helpful to a client in determining the types of services that can be obtained, the approach and level of consistency offered, and the cost.

Holding preliminary discussions with a set of vendors (four in this case) helps the client determine the scope of services it wishes to consider and select those vendors with which it feels comfortable. The client is then in a position to identify to the selected vendors the specifics they need to consider, and it should then be able to make direct comparisons on the bids.

At least two proposals should be solicited, as was the case here. Perhaps three is optimal; more than that makes the process unnecessarily complicated.

Having a reliable in-house estimate of cost for providing comparable service is a requirement in assessing the benefit and risk of vendors' proposed solutions. In this case, considering only two external solutions, provides no guarantee that they are getting the "best" solution, but comparing two external proposals with the in-house solution provides comfort that they are getting a "good" solution.

Using an external consultant also makes sense, since it is unlikely that there is the internal experience and expertise in this area. There is certainly a lot of technical and application expertise in the IS organization, but it's not objective.

However, the consultant must have the knowledge and expertise necessary. In this case the "Big 6" consultant didn't. Consequently, the company was having great difficulty in making its selection. The "RFP" was sufficiently vague that the resulting responses could not be compared in a straightforward manner.

Assuming relatively comparable costs, one of the most important considerations in selecting an outsourcing vendor is choosing a firm in which the company has confidence. "Cultural fit" and "trust" are important. It is a long-term, close relationship with a high degree of interdependence. It involves the transfer of a number of employees from the client to the vendor, and they need to feel comfortable with the relationship for it to be successful for either party. It must be perceived as a "win-win-win" for the vendor, client, and employees. However, this should not be construed as implying that a good, tight contract is not required. A good contract will help ensure that problems and differences will be minimized.

E

Proposal Analysis

INPUT analyzed the key components of each proposal and the significant differences between them. We then developed a financial analysis that put the three proposed solutions on a comparable footing.

INPUT used the following 13 key proposal elements in this analysis. The same process can be followed in analyzing other proposals.

1. *Coverage*—What is being proposed by each vendor? What function and units will be outsourced? For example, who will handle the user help desk? INPUT used a staff checkoff list as a control: if the vendor didn't deal with a staff unit in its proposal then it was not a covered item.

2. *Personnel*—What is being proposed for all staff covered by the proposal? Where will they be located if kept? Who will be transferred to the vendor, left with the company, or terminated? What will the next staff reduction consist of?

Of those transferred, how many will be relocated? Who will pay the relocation costs? (In this case, one vendor required the company to pay, the other vendor included the costs in its bid.)

For staff transferred but kept at the client's site, who provides and pays for facilities, services, and support? What about severance terms (one vendor included severance payments in its bid, the other did not)? What employment guarantees are made?

What additional staff will be provided? (In this case, application development and maintenance needed considerable strengthening.) For staff required in excess of the planned and bid number, what will be the billing rates? (There were considerable variations in this case.)

For transferred staff, what salary and benefit policies will be followed? Would there be parity? What about scheduled increases?

Some of these personnel points may seem trivial, but they are not. Unhappy staff can and will cause problems. Both company and vendor are most vulnerable in the transfer stage.

3. Applications Development and Maintenance—How will this be handled? Which organization units in the vendor will be responsible? What are the staff levels that will be applied? Where will they be? How will they communicate with the client?

What tools, techniques, and management processes will be applied? Who provides and pays for development equipment? (In this case one vendor included it and one did not.) What new software kernels, packages, etc., will be applied?

What will be the rates of development, support, and maintenance at different stages of the contract? What rights to third-party software will the client have? In other words, can it select another company's software package to run on the outsourcing vendor's systems?

4. Computer Hardware—What is the basic platform that will be used? How is this likely to change over the life of the contract? Will the platform be dedicated or shared?

What capacity level is planned? (In this case, both vendors planned for the identical capacity use over the next seven years. They then proposed incremental rates for processing (MIPS) and storage on DASD.)

What are the charges and variations with time of these charges for incremental resources? (It was in this area that INPUT was able to be most helpful to the client—saving it a substantial amount of money over the life of the contract. INPUT found it almost unbelievable, but one vendor was actually proposing that DASD charges should increase annually at the rate of inflation, in spite of the rapidly decreasing cost of DASD storage!)

What are the provisions for "pass through" of technology and price/performance improvement? (These were initially almost non-existent in this case.) How will the client be kept current with respect to technology?

5. *Software*—Who will retain the software licenses and pay the maintenance costs? (In this case, one vendor included these costs, the other expected the client to pay and to also make the arrangements for transfer.)

Who will negotiate with third-party software suppliers?

What operating environments (operating system, network protocols, data base systems, user interfaces) does the vendor use and which will be used in this contract?

Will the client be required to change standards, names, JCL, etc.? Will the user interface change?

6. *Network*—What communications facilities will be covered? (One vendor in this proposal included voice network management, the other did not.) How will network changes be made? Who is responsible for remote devices, terminals printers, switches, etc.?

What technology will be used? How will remote devices be configured? What about remote LAN management? Who will pay for communications? (In this case one vendor included all communications in its bid, the other agreed to manage data communications but expected the client to provide all hardware and remote software and to pay communications costs directly.)

7. *Service Levels*—What commitments are made? How are service levels determined and measured? How is quality measured? (INPUT carried out these evaluations in this case.) What are the schedules of system availability? What are the reliability/availability objectives and how is performance measured? What are the schedules for production work, and how can they be changed?

8. *Security*—How is this handled? What about physical and system security? What about back-up and disaster recovery? (One vendor in this case proposed a "cold site," the other a "hot site." In INPUT's opinion, this should be specified by the client.) How are files and programs backed up and protected?

9. Account Management—What are the proposed methods of account management? Who will communicate with the client/vendor and how will this be handled? What will be the make-up of the steering committee?

How will changes be handled? What notifications are required? What approval processes will be used? How will capacity planning, service level agreements, billing, training, regulatory compliance, security, and day-to-day administration be dealt with?

What will be the reporting on capacity use, reliability response time, etc.?

Many of these details should be defined in an operations manual.

10. Audit—How does the client audit/validate use of resources? What benchmarks will be used? For development activities, how are billing hours reported?

11. Mediation and Arbitration—What are the procedures for resolving disputes? Who will perform these tasks and how will they be chosen?

12. Contract Termination—How can this be done? In what circumstances? What are the termination costs? (In this case one vendor refused to consider termination in the first three years. Starting in the fourth year, the fee was 25% of the remaining fee for the period of the contract. The other vendor proposed a flat fee for years 2 to 4 and specified a declining fee thereafter.)

Who has rights to software developed and in development at the time of termination?

13. Financial Conditions—What are the fees, costs, and schedule of payments. (In this case one vendor used the same fee for each of the seven years proposed for the contract; the other vendor had a substantially higher charge for the first year, then lower charges for the remaining six years.)

What inflation assumptions are built in? What is the basis for adjustment? (One vendor proposed the CPI-U and the other the average of the ECI and the CPI-U. After negotiation both vendors agreed to include a rate of 3% in their bids. The client would then pay all or some portion of the excess inflation in any year.)

To what does the inflation rate apply? (In this case, one vendor applied it to everything including DASD; the other vendor applied it to personnel with expectations of reductions in rates for equipment resources.)

How will variations in client capacity requirements be handled? (One vendor only allowed for upward escalation of capacity requirements; the other vendor allowed for reduction of capacity requirements as well.)

The above gives some idea of the scope of a proper proposal evaluation program. The process in this case would have been greatly improved if the consultant employed by the client had been more knowledgeable and explicit in developing requirements.

Proper specifications, as in everything dealing with computers, go a great way to reducing the effort and cost of bidding and negotiations (on both sides).

F

Conclusion

Based on the analysis, INPUT recommended that the client make one last pass at one vendor to see if some of the vague aspects of its proposal could be cleared up, and subsequently, that the company proceed with contract negotiations with the other selected vendor as follows:

- Requiring the vendor to either re-bid the proposal or resubmit the proposed contract reflecting in writing the changes in clauses regarding inflation, completion of current development, etc., negotiated verbally with INPUT

- Setting up a team to develop the operations manual discussed above

- Insuring that the weaker technical aspects of the proposal were resolved and documented for the life of the contract

The company has since negotiated a final contract with the selected vendor.

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IX

Case Studies in Outsourcing

This section provides brief case studies covering several types of IS outsourcing. Examples are provided for the following:

- Transition management
- Applications maintenance
- Platform systems operations
- Application systems operations
- Desktop services

A
Transition Management

1. Case Study A

This example illustrates a very typical use of transition management. The company that is the subject of Exhibit IX-1 is a major retailing organization, whose senior executives perceived that the IS systems in use were no longer well aligned with changing business needs. Accordingly, it was decided to develop new systems and to phase out the mainframe and its existing systems.

New systems were to be developed by the internal IS department, which retained a high level of credibility with senior executives of the company. However to assist in refocusing the IS department in the new developments, it was felt desirable to free IS personnel from maintenance and support activities on the "old" systems and to free space for locating the new equipment.

As a result, a transition management contract was negotiated with a systems operations vendor whereby the mainframe was relocated in the vendor's data center and the vendor took over responsibility for operating the equipment and maintaining some of the applications for a period of two years.

EXHIBIT IX-1

Case Study A: Transition Management

Reasons for Adoption	Free personnel to develop new systems
Vendor Selection Criteria	Technological capability Cost Location
Length of Contract	2 Years
Level of Satisfaction	Good
Likes	Efficiency of operations
Dislikes	Minor operational problems

It is intended that the contract will terminate at the end of the two-year period when the "old" systems are no longer required.

Overall, the users have been very satisfied with the service levels provided by the vendor, the only problem being minor operational problems caused by misunderstandings between the users and the operators at the data center.

2. Case Study B

Case Study B, as summarized in Exhibit IX-2, concerns a regional computing center of a health authority in the U.K.

The regional computing center was responsible for the provision of processing services, software development, evaluation and acquisition, and network management covering each of the district health authorities within the region. As well as political pressure to outsource, regional computing facilities were becoming inappropriate since decision making and corresponding information systems were being increasingly devolved to the district and hospital levels. In addition, it was difficult to recruit and retain good staff, and the region's capital budgets were inadequate to maintain IS investment.

As a result it was decided that the existing regional operation should be taken over by a systems operations vendor who was prepared to guarantee

As a result it was decided that the existing regional operation should be taken over by a systems operations vendor who was prepared to guarantee

- Service levels to the district health authorities
- Price protection to the district health authorities

Even though the entire operation was transferred to the systems operations vendor and the districts are guaranteed support for up to five years, they are also free to run their own local systems or enter into agreements with the vendors of their choice.

EXHIBIT IX-2

Case Study B: Long-Term Transition Management

Reasons for Adoption	Not a core activity. Trend away from regional computing centers
Vendor Selection Criteria	Price Staff selection
Length of Contract	5 years
Level of Satisfaction	Good
Likes	Improved network management
Dislikes	Would like more proactive stance

The systems operations vendor looking after the regional systems is guaranteed the right to be invited to tender for new business or applications, but will have to win the business in competition with other software and services vendors. There is no guarantee that the vendor will receive any IS development business.

So far the users have been very satisfied with the service provided, with improvements in the help desk facilities and the eradication of operating problems in the wide-area network being the most obvious manifestations of the improvements made. However, the user would also like to receive a more proactive stance from the systems operations vendor and faster progress towards the implementation of up-to-date IS systems.

B

Applications Maintenance—Case Study C

Case study C, outlined in Exhibit IX-3, concerns a large IS group where there is pressure for new applications that reflect more customer orientation. Freeing IS staff with valuable internal business knowledge was the main objective.

The application was a major inventory and warehouse management system implemented at several locations for regional operations. The five-year-old systems had been treated like most heavily used applications—speedy fixing of problems had taken precedence over elegantly engineered solutions.

Because of the speed, and lack of discipline, with which "faults" had been "corrected," the system was particularly fragile and end users perceived that a 24-hour emergency service was required. The system was also providing end users with very poor response times—at one point response times had reached 20 minutes. As a result, it was perceived that the system would need to be replaced as soon as a suitable application software product could be found on which to base its successor.

Since 23 people were employed in supporting the application, this was an excellent test case on which to judge the promises of the service vendor.

In this case the knowledge transfer required to release 19 of the in-house support and development staff took six months. There was also considerable spin-off in knowledge transfer from the vendor to the computer operations staff, as improved working practices were applied to establish a more stable and reliable software environment.

This led to response times of less that one second being achieved. In addition, the original high level of end-user complaint has given way to silent satisfaction and the original 24-hour emergency service level has been reduced to a normal working hours service. Many of the new working practices introduced by the vendor have been adopted by the IS client management.

The net result was the continued use of the application—it was no longer felt necessary to replace the system at considerable expense.

As with other types of systems operations or facilities management service, the major benefit seen by client management is having a defined and costed service level as the primary objective of the service contract.

EXHIBIT IX-3

Case Study C: Applications Maintenance

Reasons for Adoption	Need to free staff and improve user service
Level of Satisfaction	High
Likes	Much improved user service
Dislikes	None

This measurability of course is the key to the success of such projects. Most IS departments have not acquired the tools or management techniques to clearly define and regularly measure the performance criteria by which both end users and IS management can judge the success of an application. They are more usually trapped in a "fire-fighting" mode.

When end users have more than just response times by which to measure the service they receive and can assess the cost benefits of changes they would like, then they can make informed decisions and become involved in reducing running costs with clear ownership of their own application requirements.

However, in spite of the considerable success achieved by this project, no other applications have been outsourced under application maintenance agreements by the user.

C
Platform Systems Operations

1. Case Study D

The company that is the subject of Exhibit IX-4 is a large manufacturing company running applications such as accounting and production management on IBM mainframe equipment. Like many discrete manufacturing companies, the company operates in highly competitive markets and faces constant pressure to reduce costs.

Accordingly, the company decided that, whereas control of the information available to management is a critical success factor, running computer platforms is not. The company outsourced its mainframe operations, which were transferred to the system operations vendor's data center, but retained in-house all application development.

The major benefits perceived by the user included

- Fixed annual costs
- No overtime payments to operations personnel
- No involvement in equipment upgrades
- Freedom from concerns over evolving operating systems

The combination of service levels and cost was the major basis for the choice of vendor, but the vendor's proven technical expertise was also an important consideration.

EXHIBIT IX-4

Case Study D: Platform Systems Operations

Reasons for Adoption	Mainframe operations not a core business
Vendor Selection Criteria	Cost Service levels
Length of Contract	5 years
Level of Satisfaction	Good
Likes	Improved level of service
Dislikes	Adjustment to new working relationships

The users perceived that service levels improved as a result of the new arrangement, and their major concern was the length of time it took the in-house development personnel to adjust to the new working relationships with their former colleagues operating the systems.

2. Case Study E

Case Study D reflects the traditional role of platform systems operations in providing a fixed-cost service on mainframe equipment. Case Study E illustrates a different role for systems operations in a midrange platform environment.

The company that is the subject of Exhibit IX-5 is a manufacturing company that had decentralized into a number of business units. As a result, centralized IS services run from a common mainframe were no longer felt to be appropriate and the business units had adopted minicomputer-based solutions.

However, this had caused problems, which resulted in the financial department becoming involved in disputes over operational problems on a daily basis. The user felt that the vendor that had supplied the solution had underestimated the complexity of equipment operation. Accordingly, a platform operations contract was entered into with a systems operations vendor, which relocated the minicomputer to its own data center.

The user perceived the transition to be very well managed and is very satisfied with the invisibility of the new service, in spite of some initial confusion over the use of the vendor's hotline service. However the contract is only short term to enable the user to gain experience in systems operations and review its needs accordingly.

EXHIBIT IX-5

Case Study E: Platform Systems Operations

Reasons for Adoption	Underestimated problems in operating midrange systems
Vendor Selection Criteria	Established relationship
Length of Contract	18 months
Level of Satisfaction	Very high
Likes	Invisibility of service
Dislikes	"Teething problems"

D
Applications Systems Operations

1. Case Study F

Case Study F, illustrated in Exhibit IX-6, also concerns a company in the manufacturing sector that was faced with declining markets.

The company had been acquired by a conglomerate, and subsequently had been reorganized into a series of decentralized business units. Prior to this re-organization, the company had a large in-house IS department supporting mainframe-based systems. As a result of the re-organization, centralized mainframe-based systems were no longer felt to be appropriate and there was a strong need to realign the IS systems with the new business need. There was also a belief that the in-house IS department was extremely costly.

Consequently, the in-house IS department was abolished and the mainframe-based systems relocated to the vendor's data center. However this was only a transitional arrangement with the systems operations vendor also being given responsibility for the development of new midrange-based systems to meet the new requirements of the business.

The company was pleased with the software development and support capabilities of the systems operations vendor, although some problems in liaising with the operators in the vendor's data center had arisen.

EXHIBIT IX-6

Case Study F: Application Systems Operations

Reasons for Adoption	Move to decentralized business units Cost reduction
Length of Contract	3 years
Level of Satisfaction	High
Likes	Software development capabilities
Dislikes	Lack of consistency in operating procedures

2. Case Study G

While Case Study F is a typical example of a defensive move to systems operations being undertaken by a company facing considerable financial pressure, Case Study G, as illustrated in Exhibit IX-7, reflects a more forward-looking approach to systems operations.

The company concerned is a comparatively small insurance company, which recognized the need to develop comprehensive new IS systems to support its business but perceived the cost of investing in mainframe equipment and custom software development to be prohibitive for a company of its size.

So the company found a systems operations vendor that would enable them to share the use of a mainframe and that would develop the systems required. This has proved to be a satisfactory arrangement. However, the user regularly estimates the equivalent cost of providing the service in-house to ensure that the company is receiving good value from the systems operations vendor.

This is clearly so while the service is based on a mainframe platform, but the user has now turned its attention to downsizing and UNIX-based systems. It is probable that the company will at some point in the future transfer the systems in-house on UNIX-based equipment. The company believes that platform operation will be considerably simplified in this environment.

EXHIBIT IX-7

Case Study G: Application Systems Operations

Reasons for Adoption	Cost of developing new system
Vendor Selection Criteria	Very few suppliers
Length of Contract	3-year rolling cycle
Level of Satisfaction	Satisfactory
Likes	Application development Systems programming
Dislikes	High turnover of operations personnel

This illustrates the large potential problem facing outsourcing vendors from downsizing.

E

Desktop Services—Case Study H

Whereas Case Study G showed the potential negative impact of downsizing on outsourcing, this case study shows the opportunity. Case Study H is a desktop services contract issued by a large conglomerate, primarily in manufacturing, to a support and maintenance division of a major IT vendor.

The buyer required wide geographic coverage because of its many locations. It has over 90,000 PCs installed of almost every brand and configuration. The manager of IS stated the purpose of the contract is to “clean up our act and simplify the environment.”

The buyer was suffering from the uncontrolled environment:

- It was not getting volume discounts that large and consistent order placements could obtain.
- Maintaining compatibility among software packages was a “nightmare.”
- Training and education were complicated by the diversity of equipment.

EXHIBIT IX-8

Case Study H: Desktop Services

Reasons for adoption	Simplify the environment, obtain discounts
Vendor selection criteria	Experience, coverage
Value of contract	$500 million
Level of satisfaction, etc.	New contract

The services provided by the vendor under this contract are listed in Exhibit IX-9. The employee purchase plan is a new feature (ideally it will encourage employees to purchase non-standard items in current inventory thus getting them out of the system).

EXHIBIT IX-9

Services Provided under Desktop Services Contract

- Installation and “burn-in”
- Maintenance
- Help Desk support
- PC inventory management
- Quote Desk
- Employee purchase plan

The first priority will be to centralize the purchase and installation of equipment. Obviously getting the procurement process under control is where savings can quickly be realized and standard platforms distributed through the organization.

This is a classic example of an external source being necessary to make a fundamental change, in this case regaining control of the desktop environment. There is actually an internal unit in the buyer already charged with many of the tasks in this contract, such as maintenance and training. But they were deemed not to be able to satisfy the overall need.

However, the buyer has not totally shifted this unit to the contractor—it is working as a subcontractor. This could be a mistake.

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